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SCIENTIFIC MANAGEMENT AND LABOR WELFARE

In its original conception the Taylor system of scientific management seems to have been literally a system of shop management concerned primarily with the problem of efficient manufacture or productive efficiency in the shop. The problem was to secure the most effective character and use of machinery, tools, and materials, the most effective material and organic arrangements in the shop, and the full co-operative activity of the workers. Mr. Taylor, in his paper, "A Piece-Rate System," presented to the American Society of Mechanical Engineers in 1895, confirmed this idea of the scope and character of the new system by contrasting the care with which managers often "go most minutely into every detail of the buying and selling and financiering, and arrange every element of these branches in the most systematic manner,"[1] with the comparative lack of restrictions as to the principles and methods which the superintendent or foreman is to pursue, either in the management of his men or in the care of the company's plant, and by pointing to the differential piece-rate system of payment as "the means which the writer [Mr. Taylor] has found to be by far the most effective in obtaining the maximum output of a shop, and which, so far as he can see, satisfies the legitimate requirements of the men and the management."[2]

[1] "A Piece-Rate System," sec. 3 f. [2] *Ibid.*, sec. 50.

As time passed, however, the character, scope, and significance of scientific management seem to have steadily enlarged in the minds of Mr. Taylor, his immediate followers, and his imitators, so that when the term "scientific management" was definitely adopted by adherents of Mr. Taylor as descriptive of his system, the intent, apparently, was to emphasize claims for it much broader and more fundamental than those originally made—claims which seem to warrant the following summarization:

1. Efficiency, not only in the mechanical aspects and as it depends on organic arrangements and human effort in the shop, but with respect to the functions of a going industrial establishment, is governed by fundamental natural laws, not made by man, and unalterable by man. And not only this, but the direct relation between productive effort and human welfare, as well as the distribution of the products of industry, is likewise governed by such natural and unalterable laws, i.e., the specific character and amount of work which any laborer can and ought to do, and the proportions of the product which ought to go to management and men and to each individual workman, are thus governed.

2. Scientific management has discovered the *means* by which the facts underlying these natural laws, which govern production in the larger sense—productive welfare and distribution—can be determined and established as objective, matter-of-fact data, quite apart and divorced from human judgment, opinion, or will; i.e., the means by which all productive arrangements and processes, and all the relations between managers or employers and workmen can be reduced to an exact scientific basis of objective fact and law—a means, in other words, in the application of which, human will, judgment, and cunning cannot enter so as to affect the result, and which, therefore, will necessarily reveal the truth in regard to the most efficient arrangement and method, the kind and amount of work which any man can and ought to do, and the share of the product which every factor and every individual ought justly to receive.

It is true that these sweeping claims have never been explicitly stated by authoritative members of the scientific management group in exactly this form, but they seem to be amply warranted

by many spoken and published statements emanating from Mr. Taylor and those claiming to be his adherents.[1] Nor have the members of the scientific management cult pointed out fully the means by which these claims are to be made good. There is strong evidence, however, that both Mr. Taylor and many of his followers have believed that the principal, if not the inclusive, means necessary to the discovery and establishment of the unalterable facts and laws of efficient production and just industrial relationships has been found in the special instrument which has particularly characterized all phases of scientific management, viz., *time and motion study*.

"Scientific management," declared Mr. Taylor, "attempts to substitute in the relations between employers and workers the government of fact and law for the rule of force and opinion. It substitutes exact knowledge for guesswork and seeks to establish a code of natural law equally binding upon employers and

[1] The following quotations are taken from the "Labor Claims of Scientific Management," authenticated by Mr. Frederick W. Taylor at the outset of the writer's investigation of scientific management and labor, made for the United States Commission on Industrial Relations. (*Scientific Management and Labor*, pp. 140–49. The italics are mine.)

"Scientific management is a system devised by industrial engineers for the purpose of subserving the common interests of employers, workmen, and society at large through . . . . *the just and scientific distribution of the product.*"

"Scientific management is based upon the fundamental assumptions of harmony of interests between employers and workers. . . . ."

"It substitutes exact knowledge for guesswork and seeks to establish *a code of natural laws* equally binding upon employers and workmen."

"Scientific management thus seeks to substitute in the shop discipline *natural law* in place of a code of discipline based upon caprice and the arbitrary power of man."

"Every protest of every workman must be handled . . . . and the right or wrong of the complaint must be settled . . . . *by the great code of laws which has been developed* and which must satisfy both sides."

"Scientific management guards the workers against overspeeding and exhausting nervously and physically: (*a*) by substituting exact knowledge for guesswork in the setting of the task; (*b*) by careful studies of fatigue and the setting of the task on the basis of a large number of performances by men of different capacities and with *due and scientific allowance* for the human factor and legitimate delays."

"The speed of the men is determined by psychological and physical tests and is always set with reference to long-time results."

"Scientific management insures just treatment of individual workers: (*a*) by substituting the *rule of law* for arbitrary decisions of foremen, employers, and unions;

workmen."[1] In time and motion study it has discovered and developed an "accurate scientific method by which the great mass of laws governing the easiest and most productive movements of men are investigated. These laws constitute a great code which, for the first time in industry, completely controls the acts of the management as well as those of the workmen."[2]

Thus, time and motion study, according to Mr. Taylor, rules out, not only force and opinion from industrial affairs, but bargaining as well. There can be no legitimate bargaining, individual or collective, where the facts have been thus established. "As reasonably," said Mr. Taylor, "might we insist on bargaining about the time and place of the rising and setting of the sun."[3]

But, apparently, according to Mr. Taylor, time and motion study not only *makes possible* the ruling out of force and opinion from industrial affairs, a relatively just distribution of the product and the protection of the worker's welfare at all points, but, coupled with the fundamental natural laws which govern all industrial affairs and relations, it *actualizes* this possibility.

(*b*) by giving the workers in the end equal voice with the employer. *Both can refer only to the arbitrament of science and fact.*"

"Scientific management increases the skill, efficiency, and productivity of the workers: (*a*) by the *scientific selection of workmen* so that each man is set to the highest task for which his physical and intellectual capacity fits him."

"Scientific management . . . . gives a voice to both parties, and substitutes *joint obedience of employers and workers to fact and law for* obedience to personal authority."

"Time and motion study is the *accurate scientific method* by which the great mass of *laws* governing the best and easiest and most productive movements of men are investigated. *These laws constitute a great code which, for the first time in industry, completely controls the acts of the management as well as those of the workmen. . . . . They substitute exact knowledge for prejudiced opinion and force in determining all the conditions of work and pay.*

"They thus make possible . . . . the adaptation of the task to the intellectual and physical capacity of the workers; the payment of the workers in *exact* proportion to their efficiency; the most efficient methods of performing the task . . . . *exact cost* accounting, ... the elimination of ignorant and cut-throat competition."

"The modes of payment employed by scientific management insure pay according to efficiency . . . . secure justice for each worker."

The following is taken from the record of an interview which the writer had with Mr. Taylor on November 11, 1914: "Taylor, in general, approved my statement of

[1] *Scientific Management and Labor*, p. 140. [2] *Ibid.*, p. 147. [3] *Ibid.*, p. 40.

It *makes possible* the assignment of each worker to the task for which he is best fitted, and the safeguarding of him against over-fatigue and over-exhaustion; and because of this same harmony of interests it turns the possibility into reality.

It not only makes possible the removal of the higgling for advantage and the rough and arbitrary discipline of foremen and employers, but it actually eliminates these things.

"Scientific management," declared Mr. Taylor, "democratizes industry. It gives a voice to both parties, and substitutes the joint obedience of employers and workers to fact and law for obedience to personal authority." "No such democracy has ever existed in industry before. Every protest of every workman must be handled by those on the management side, and the right or wrong of the complaint must be settled, not by the opinion of the management or the workman, but by the great code of laws which has been developed, and which must satisfy both sides." It gives "to the

the labor claims of scientific management. He wants more emphasis placed upon the idea of government by law and democracy. He says that people, in general, have not a broad enough idea of scientific management. . . . . Taylor emphasizes the notion that scientific management is working out laws in the place of opinion. These laws are not subject to collective bargaining, any more than the tensile strength of steel. . . . . In going over my statement of the labor claims of scientific management, Taylor asked to have two changes made: under A-4, 'Scientific management seeks thus to substitute in the shop discipline . . . . natural law in the place of . . . .' he would add, 'No such democracy has ever existed in industry before. Every protest of every workman must be handled . . . . by those on the management side, and the right and wrong of the complaint must be settled, not by the owner, the management, or the workman, but by the great code of laws which has been developed, and which must give satisfaction to both sides.' "

Under C-1-*a*: "Taylor objects to my consideration of time and motion study simply from the standpoint of efficiency and justice to the workers and the improvement of their conditions. He would say: 'Time and motion study is the accurate scientific method by which the great mass of laws governing the best and easiest and most productive movements of men are investigated. These laws constitute a great code which, for the first time in industry, completely controls the acts of the management as well as those of the workmen, etc.'

"Although I thought that I had taken particular pains in my statement of the labor claims of scientific management to bring out clearly and to emphasize the idea of the government of law in the place of force and opinion, as constituting the essentials of the scientific management spirit, Taylor continuously harped on this and upon my failure to grasp this idea, and, therefore, insisted that these changes should be made, in order to give proper emphasis to the idea."

worker in the end equal voice with the employer. Both can refer only to the arbitrament of science and fact."[1]

All this and much more is the result of this instrument for the determination of the facts and laws of industry which scientific management claims to have discovered.

There can be little doubt, then, that Mr. Taylor looked upon scientific management as truly scientific in the sense that its productive and distributive policies and methods are based upon unalterable laws of nature and upon facts discoverable, but unalterable, by the management or workmen concerned. In this his followers appear to have been well in accord with him. Moreover, it is evident that time and motion study is the principal means upon which they rely for the discovery of this scientific foundation of scientific management. *Time and motion study, therefore, must be regarded as the chief cornerstone of scientific management, its main distinguishing feature, and the point of departure for any understanding and judgment of its claims, especially with reference to its scientific character and labor welfare.* Let us then examine the nature and uses and effect of this thing.

There seem to be at least two very diverse conceptions of time and motion study. The first is a very narrow one with respect both to its character and to its uses, held in its most typical form by labor generally, adherence to which according to advocates of scientific management leads to much misinterpretation of its real character and uses. The second is a far broader conception, not always recognized by scientific managers themselves, but clearly implicate in the later claims of Mr. Taylor, and in the statements and methods of the more advanced scientific managers, which has apparently developed along with the enlarged and enlarging view of the scope and character of scientific management previously noted.

In its narrower conception, and as understood by labor, generally, time and motion study is looked upon simply and solely as an instrument for task setting and efficiency rating, used thus, in the main, to determine how much can be done by a workman engaged in a given operation, within a given time, and, therefore, to set

[1] *Scientific Management and Labor*, pp. 140–41, 145, 147.

the maximum task accomplishable by him and the group of laborers to which he belongs. Labor thus pictures a cowering workman over whom stands a labor driver. In one hand he holds a split-second watch. In the other he has a sheet of paper on which are set down the elementary motions of which the job is made up, with spaces opposite each in which may be recorded the time taken by the workman to make each motion. The watch is started. The workman jumps to his task. The time taken for each motion involved in the doing of the job is recorded. The operation is then repeated enough times to satisfy the observer that he has discovered the shortest time required by the worker to make each motion. These shortest times are then summed up as the necessary time, and this, with some allowance for human necessities, breakdowns, and delays, is set as the task time.

This, I say, is labor's habitual conception of time and motion study. It is supposed to be employed only or mainly for the purpose of task setting, and it is assumed to be used to set the minimum time or the maximum task to which the laborers can be forced.

This view of time and motion study, however, accords ill with the later and enlarged conception held, apparently, by Mr. Taylor and by many, if not all, of the present members of the scientific management group. Judged by this standard, it is erroneous in two very essential respects.

In the first place, time and motion study, according to this later conception, when used for task-setting purposes, is not designed to discover and set the minimum time or the maximum task, but the scientific time or task, i.e., the reasonable or just task, considering the technical conditions, the character and training of the workmen, the element of fatigue, etc.

In the second place, time and motion study, in its larger conception, is not merely or perhaps mainly a method used for task setting and efficiency rating. On the contrary, in the light of the recent claims based upon its use, made by Mr. Taylor, and of the problems to the solution of which it is apparently being applied by progressive scientific managers, *time and motion must be conceived as little less than a universal method of attempted accurate industrial analysis*, usable, with or without the stop-watch, to

discover, at almost every step of the productive and distributive process, not only the most effective material, organic, and human arrangements, adaptations, and combinations, but the reasonable demands which can be made upon the intelligence and energy of the management as well as the men, and the just apportionment of the product to all the factors and individuals concerned.

To show that this larger conception of time and motion study is not a mere deduction from the claims made by Mr. Taylor, we have only to consider the attitude of some of the advanced scientific managers in regard to its possible uses.

According to statements made by scientific managers, this process of analysis or time and motion study, in the larger sense, should, where possible, begin with the determination of a site for manufacture. The really scientific manager, starting out *de novo*, will consider all available sites with reference to the time and motion expenditure, determined by actual experiment, necessary in securing an adequate supply of proper materials, in the going to and from the shop of the numbers of the different classes of workmen needed or likely to be needed, in the shipment and marketing of the product, etc. Having in mind the character of the productive process, and the most efficient productive arrangements possible, he will then, with regard to the greatest possible saving of waste time and motion, work out, with the utmost care, and with reference to future expansion, the plans for the construction of his plant. This will involve a most careful study of all the general internal arrangements and processes, the most efficient methods of planning the work to be done and of routing it through the shop so that there may be no delay in transmitting orders, no waste carriage of materials and partly finished products, no lost time in the assembly room waiting for delayed parts. With the same ends in view, and in the same manner, he will also determine the most effective placement of machinery, the storage of tools and materials, and the location of the various elements of the office force.

The shop constructed and the machinery installed, he will apply time and motion study in an endless series of experimental tests to determine what possible improvements can be made in machinery and its operation, and in the tools, fixtures, materials,

and specific processes of work. The best feed and speed for each machine, with reference to the different grades of materials, will then be established. The different jobs or processes will be analyzed and reanalyzed, and their elements experimentally combined and recombined, the tools and fixtures changed and rearranged, and all these variations timed and retimed in an effort to discover the most efficient productive combinations and methods.

This time and motion study analysis will extend, it is thus claimed, to every feature and all organic relationships of the mechanical process of production. But it will not stop there. It will be extended to cover the managerial functions and the office work. The duties of the managers, superintendents, and especially of the shop foremen will be analytically studied and reorganized. As a result, the work of the old managerial functionaries will be split up, and new departments with new department heads established. In place of the single old-line foreman, for example, charged with hiring, discipline, discharge, apportionment of work, the setting up of jobs, the determination of speed and feed of machinery, repair of machinery and belting, inspection of the product, etc., there will be a separate head charged with the selection, hiring, adaptation, and discharge of workmen, and a series of functional foremen, each responsible for a particular duty, e.g., a gang boss, a speed boss, a repair boss, an inspector of work, an instructor, a route clerk, a time and cost clerk, a disciplinarian.[1] The methods of storage and delivery of tools and materials, the dispatching of orders from the office to the shop, the purchasing of materials, the marketing of products, and all the methods of accounting will likewise be subjected to time and motion study, in this larger sense, with a view to discovering the most efficient means and methods. All this and much more is time and motion study in the larger conception of the term, which seems to be sanctioned by progressive scientific managers. And not until, through this broader time and motion study, a larger degree of improvement and standardization of the general productive process has been well advanced, should the scientific manager, according to these experts, enter upon time and

[1] It is not intended, of course, to imply that no other factors or considerations enter into the determination of such matters, aside from time and motion study.

motion study in the narrower sense, i.e., putting the time-study men, with stop-watches, over the workmen engaged in a particular job for the express purpose of setting tasks and rates of wage payment.

Nor, under the direction of this really scientific manager, we are told, will this part of the time and motion study correspond to the conception of it held by labor. On the contrary, it will be done in the same spirit and with the same care that we have noted above. It will endeavor to discover by repeated analysis and experimental timing the best character, combination, and arrangement of tools, materials, machinery, and workmen, the most efficient and convenient lighting, heating, and seating arrangements for the workmen, the proper period for continuous operation by them, considering the element of fatigue, the rest periods needed, their most efficient character, combination, and sequence of motions, etc. Moreover, these particular job experiments will not be confined to one man, or to a few of those who are to accomplish the task. Many men will be timed with the idea of discovering, not the fastest speed of the fastest man, but the normal speed which the group can *continuously* maintain. If necessary, hundreds and perhaps thousands of time and motion studies will be made to determine this, before the task is set and the rate established. And whenever a new or better method or combination has been discovered by the time and motion analysis, which is supposed to continue even after the task is set, the whole process of careful and extended timing for task setting will be repeated, and new tasks and rates established reasonably conformable to the new conditions.

Finally, as an integral part of this broader time and motion study, all the results secured by it will be continuously and systematically filed as permanent asset and guide to future action.

Thus conceived, time and motion study appears to be considered a method of analysis applicable to practically every feature of the productive and distributive process, considered apart from its purely financial aspects, a process of analysis applied continuously throughout the life of the establishment. And the scientific management based upon it is conceived to be a perpetual attempt to discover and put into operation the new and continuously develop-

ing technical, organic, and human arrangements, methods, and relationships constantly revealed by it to be more efficient and more equitable. That this broader conception of time and motion study as the essential basis of scientific managements exists, not as a mere dream, but as a practical ideal striven for with the confident hope of realization, the writer can attest from his experiences in the best class of scientific management shops.

So much for the conception of scientific management and of the essential means or methods upon which are based the claims put forward by Mr. Taylor and his adherents and imitators relative to its character and its effect upon the welfare of labor. Let us now consider its possible and actual effects upon labor, granting the reality of this broad conception of time and motion study.

It is evident that the major claims of scientific management relative to labor are closely bound up with the assumption that it is truly scientific in its dealings with labor. It is evident also that this assumption cannot be evaluated and judged on the basis of the fundamental postulates of scientific management, viz., that productive efficiency and just distribution of the product are governed by natural laws, not made by man, and unalterable by man, and that a fundamental harmony of interests exists between employers and workmen. These assumptions might be true, and still scientific management would not be scientific in practice until it had discovered and based itself on the objective facts and laws upon which these assumptions rest. The practical question, then, whether scientific management is actually scientific becomes, to all intents and purposes, the question whether it *has*, in fact, discovered a means by which all productive arrangements and processes and all relations between employers and workers can be reduced to a basis of exact objective fact and law, a means, in other words, in the application of which human will, judgment, and cunning cannot and will not enter so as to affect the results, and which, therefore, will necessarily reveal the truth in regard to the most effective productive arrangements and methods, the kind and amount of work which any man can and ought to do, the share of the product individuals ought justly to receive relative to each other, the savings effected, and prevailing wages. Time and motion

study, as we have seen, is supposed to be the most effective means to these ends. Let us then discuss it briefly from this standpoint.

In considering this question, we must carefully distinguish between two factors or elements which enter into the industrial process, the mechanical or material, and the human.

With respect to the first of these elements, the claim of scientific management seems to be fairly justified. Through time and motion study in its broader conception, it appears to be possible to discover and to establish in practice the objective facts and laws which underlie the most efficient mechanical arrangements, processes, and methods of production in the shop.

The moment, however, that the conception is broadened and the human factor enters into the situation, and the problem becomes one of setting each man to the work for which he is best fitted, determining how much work any man ought to do, the claims of scientific management with respect to time and motion study, and, therefore, with respect to the character and effects of scientific management, do not seem capable of practical realization.

Not only does it appear that the fundamental basis for these claims is lacking in the absence of discovered laws applying to such matters, but careful consideration shows that time and motion study, applied to the determination of the facts in this connection, is not capable of yielding objective results, uninfluenced or uninfluenceable by human will and judgment. On the contrary, the methods and results of time study used for task setting and rate making are, in fact, the special sport of individual judgment and opinion, subject to all the possibilities of diversity, inaccuracy, and injustice that arise from human ignorance and prejudice.

Fundamentally, the task set themselves by the scientific managers where the human element is concerned seems impossible of attainment, at least in the present or in the near future. Psychologists have, perhaps, developed a technique to determine which of two men is better able at a given time to perform a new task, but they have no technique as yet for determining which of two men would finally become the better worker at the task, or for deter-

mining in what task any man would reach his greatest development. Moreover, no definite laws have been discovered which, in the case of the individual worker, can be applied to solve the problems of fatigue and efficiency, much less any which reveal the long-time effects of any amount of work upon the worker.

The problem of relative productiveness and just distribution is still farther from scientific solution. It is possible, by time and motion study, to determine the relative productiveness of two workers engaged in the same task, provided all the conditions are identical, but it is not possible thus to determine the relative productiveness of two workers engaged in different lines of work involving different productive elements. Here qualitative factors enter into the problem. And this alone makes evident the impossibility of determining, by means of time and motion study, the relative productivity of the capital, the managerial factor, and the labor, which together turn out a given product; the impossibility, therefore, of determining, by time and motion study, the law or laws of the just distribution of the product among these factors. Here the qualitative element is supreme, and the problem has thus far baffled human ingenuity.

But even in the effort to disclose the simple objective facts of human productiveness, uninfluenced by human will and judgment, and to use these facts as a basis for fair task setting, the method of time and motion study proves on careful analysis to be altogether inadequate. Such analysis shows that at a score of points in this process the judgment of the employer, the time-study man, or the workers may be and is exercised so as to produce variations that will affect and alter the task itself. In other words, the time-study process includes a score of factors variable with the judgment and will of those concerned, variation in any or all of which acts as a determinant of the factual results, thus belying the claim that time and motion study is a method by which the objective scientific facts concerning the amount of work or the extent of the task which any man or any group of men can and ought to perform may be scientifically demonstrated, if by this is meant that the results thus obtained are objective scientific data unaffected by human will and judgment.

Analysis shows that among the factors that may vary, subject to human will, and that thus do affect the results of time and motion study used for task setting, are:

1. The general attitude, ideals, and purposes of the management, and the consequent general instructions given to the time-study man.

2. The intelligence, training, and ideals of the time-study man.

3. The degree to which the job to be timed and all its appurtenances have been studied and standardized, looking to uniform conditions in its performance for all the workers.

4. The amount of change thus made from old methods and conditions of performance, e.g., the order of performance, the motions eliminated, and the degree of habituation of the workers to the old and the new situation when the task is set.

5. The mode of selection of the workers to be timed, and their speed and skill relative to the other members of the group.

6. The relative number of workers timed, and the number of readings considered sufficient to secure the results desired.

7. The atmospheric conditions, the time of day, the time of year, the mental and physical conditions of the workers when timed, and the judgment exercised in reducing these matters to the "normal."

8. The character and amount of special instruction and special training given the selected workers before timing them.

9. The instructions given to them by the time-study man as to care and speed, etc., to be maintained during the timing process.

10. The attitude of the time-study man toward the workers being timed, and the secret motives and aims of the workers themselves.

11. The judgment of the time-study man as to the pace maintained under timing relative to the "proper," "normal," or maximum speed which should be demanded.

12. The checks on the actual results used by the time-study man in this connection.

13. The method and mechanism used for observing and recording times, and the degree of accuracy with which actual results are caught and put down.

14. The judgment exercised by the time-study man in respect to the retention or elimination of possible inaccurate or "abnormally" high or low readings.

15. The method used in summing up the elementary readings to get the "necessary" elementary time.

16. The method employed in determining how much should be added to the "necessary time" as a human allowance.

17. The method of determining the "machine allowance."

That the factors thus enumerated are not constant in practice, and that the tasks thus set by time and motion study have no necessary scientific relation to what the members of a working group can or ought to accomplish, but are dependent chiefly upon the judgment of the time-study man, I can positively affirm as the result of many careful observations of time studies for task setting made in scientific management shops, and much analysis and discussion of results with scientific managers and time-study men. Especially is this true of the mode of selecting the workers to be timed, and their speed and skill relative to the workers of a group, and of the methods of summing up the elementary readings to get the necessary elementary time. In these vital matters there are no generally observed rules, but each shop is likely to be a law unto itself. Nor does consistency prevail in the same shop, the result being that the task set may, and sometimes does, mean anything from the output of the "swift" to a "fat job" even for the plodder.

Such being the facts, however *scientific* scientific management may be in its technical and mechanical aspects, it is little less than absurd to speak of it as scientific outside of these spheres. It is not, and apparently cannot be, scientific in task setting. Indeed, under the general circumstances which prevail in industry, the very conception of a single task set for a whole group of workers or of an invariable task for an individual to be accomplished from hour to hour and day to day is unscientific, looked at from the standpoint of adapting the work to the individual capacities of the workers, or from that of strict justice. Nor, if our analysis has been correct, can scientific management be scientific in the matter of rate making, the distribution of the product, or, in fact, in any of its dealings with the human element. Its claims, therefore, relative to the

discovery of objective scientific facts where working relations are concerned, which are not proper subjects for bargaining, and relative to the discovery and establishment of natural laws governing all the dealings of employers and workers, which cannot be violated or which insure justice in effort demanded and in wage payment, seem to have no legitimate foundation.

As the result of the lack of a scientific basis for scientific management and of anything in the system itself capable of preventing violation of its own standards, in matters which concern human conditions and relations, we find that in actual practice the relations of scientific management to the workers are, in the main, as elsewhere in industry, determined by the ideals and intelligence of the particular management, the exigencies of the particular shop, and the general industrial situation. No safe generalizations can, therefore, be made in regard to most of its dealings with the workers. Some of the managers are high-minded and intelligent, and their immediate relations to their workers are marked by liberality and fair dealing. Others are just ordinary, morally and intellectually, with the results that might thus be expected. It is not impossible to find men calling themselves scientific managers, and assuming to put into operation the Taylor, Gantt, or Emerson systems, whose sole or main intent seems to be to use scientific management methods to get as much as possible from, and to give as little as possible to, the workers. The movement is still in its infancy, and, in some respects, is, at best, still crude and inadequate in its dealings with the men. There is no doubt that adherence to Mr. Taylor's ideal of the strict maintenance of standard conditions of work and pay, as long as the efficiency conditions are not altered, marks a distinct advance in the interests of labor over the ideals which have been wont to govern the relations of employers to unorganized labor. On the other hand, it is an unfortunate fact that scientific management at the present is desperately fake-ridden, and where the fakirs—experts or managers—are in the saddle, the results justify every charge that the workers hurl against the movement. Thus, in actual practice, scientific management varies from good, fair, and liberal through every gradation to bad and positively oppressive, in its methods and results, with

respect to the selection and hiring of workmen, the adaptation, instruction, and training of workers, time study and task setting, rate making, modes of payment and maintenance of rates, protection of workers from overspeeding and exhaustion, opportunities offered for advancement and promotion, modes of discipline, methods of discharge, length of service, etc.

There are, however, at least three matters of vital general concern to the workers and society with respect to which safe generalizations with regard to scientific management seem to be possible.

a) First, scientific management has in it possibilities of enormous increase of productive efficiency. In time and motion study, broadly conceived, it has apparently discovered a means such as we have never before had for the systematic, continuous, and indefinite improvement of productive processes and methods. Moreover, if properly guarded and guided, this method may be used very effectively without entailing any evil results to the workers in the way of overspeeding and exhaustion. Scientific management, therefore, not only holds out possibilities of substantial benefits to labor, but it points the way toward raising the standard of living of all classes of labor and of society at large. No one who has grasped the import of the analysis which I have tried to give of time and motion study in its broader conception can, for a moment, doubt this statement.

b) Secondly, scientific management, as it actually exists, is, in spirit and results, undemocratic in so far as we associate industrial democracy with labor organization and collective bargaining. It generally tends to weaken the competitive power of the individual worker, thwarts the formation of shop groups, and weakens the solidarity of those which exist. It is generally lacking in the arrangements and machinery, which, considering the workers' experience and psychology, seem to be necessary for the actual voicing of their complaints, and for the consideration and adjustment of their grievances, except as individuals. Collective bargaining has ordinarily no place in the determination of matters considered by organized labor to be vital, and the attitude toward collective bargaining is usually tolerant only when it is not understood. Unionism, where it means a vigorous attempt to enforce

the viewpoint and claims of the workers, is generally looked upon with abhorrence. A few of the adherents of scientific management are democratic in spirit and purpose. Some think themselves democratic, but analysis of their ideals and attitudes shows them to be in reality adherents of a benevolent industrial despotism. More are definitely committed to an autocratic attitude. But, whatever the spirit of the management, scientific management, *in practice*, by virtue of its most essential and characteristic feature, time and motion study, tends apparently, inevitably, to the elimination of what are considered by the organized workers as democratic arrangements and possibilities. The cogent reasons for this conclusion will appear immediately.

c) Finally, scientific management, *in its essential nature* and unsupplemented, seems to be a force tending to reduce the great body of workers to a little-skilled, practically interchangeable and unorganized mass, with all this implies with respect to possible insecurity and discontinuity of employment, wage leveling, and the mental and moral quality of the workers.[1]

Scientific management, at its best, furthers the modern tendency toward the specialization of the workers. Its most characteristic features—functional foremanship, time and motion study, task setting, and efficiency payments—all have this inherent effect.

Functional foremanship means that the worker is to have taken from him much that he formerly had to perform in connection with the particular task. It projects the managerial activity down into every phase of shopwork. As Mr. Taylor says, it effects a more equal division of the work between the management and the men by taking from the latter much of the work which they were formerly obliged to perform. Under scientific management, as fully developed, the machine hand is intended to be, and is, in fact, a machine feeder and a machine feeder only, with the possibility of auxiliary operations clearly cut off; and what applies to the machine feeder applies with more or less thoroughness to machine and hand operatives generally.

[1] I cannot indicate this more clearly than by reproducing in condensed form the discussion of this subject embodied in the report on scientific management and labor made to the United States Commission of Industrial Relations.

But it is not merely in sweeping from the job its auxiliary operations that scientific management tends to specialize the work and the workers. Time and motion study, the chief cornerstone of all systems of scientific management, tends inherently to the narrowing of the job or task itself. The chief function of time and motion study, as we have seen, is the analysis of work, the reduction of operations to their elementary motions and units, and the recombination of these elements into operations more quickly and easily performed. Its preponderating tendency is to split up the work into smaller and simpler operations or tasks, and to further the invention of new machinery of a more automatic type, and of machinery for the performance of former hand operations.

With functional foremanship lopping off from the job the auxiliary operations, and time and motion study tending to the narrowing of the task itself, task setting and efficiency methods of payment come into play as forces tending to confine the worker to a single task or narrow range of operations. The worker is put upon the special task for which he seems best adapted, and he is stimulated by the methods of payment employed to make himself as proficient as possible at it. When he succeeds in this, to shift him to another task, ordinarily involves an immediate and distinct loss to the employer and to the workman himself.

This inherent tendency to specialize is buttressed, broadened in its scope, and perpetuated by the progressive gathering up and systematizing, in the hands of the employers, of all the traditional craft knowledge in the possession of the workers. With this information in hand, and functional foremanship to direct its use, scientific management claims to have no need of craftsmen in the old sense of the term, and, therefore, no need for an apprenticeship system, except for the training of functional foremen. It therefore tends to neglect apprenticeship except for the training of the few.

But scientific management is not only inherently specializing, it also tends to break down existing standards and uniformities set up by the workmen, and to prevent the establishment of stable conditions of work and pay. *Time and motion study* means constant and endless change in the methods of operation. No sooner is a

new and better method discovered and established, and the conditions of work and pay adapted to it, than an improvement is discovered, involving, perhaps, new machinery, new tools and materials, a new way of doing things, and a consequent alteration of the conditions of work and pay, with perhaps a complete reclassification of the workers. Change and more change is the special purpose and mission of this essential instrument and central feature of scientific management.

Certain conclusions inevitably follow. Scientific management, fully and properly applied, tends to the constant breakdown of the established crafts and craftsmanship, and the constant elimination of skill in the sense of narrowing craft knowledge and workmanship, except possibly for some members of the managerial staff and the lower orders of workmen.

Under these circumstances, the progressive degeneration of craftsmanship and the progressive degradation of skilled craftsmen, under scientific management, would seem inevitable, unless some means can be found for their preservation and development outside the shop.

What this means in increased competition of workman with workman can be imagined. Were the scientific management ideal, as at present formulated, fully realized, any man who walks the street might be a practical competitor for almost any workman's job. Such a situation would inevitably break down the basis of present-day unionism in its dominant form, and render collective bargaining, as now practiced, impossible in any effective sense in regard to the matters considered by the unions as most essential.

Granting the correctness of this interpretation, the more ultimate effects of scientific management, should it become universal, upon wages and employment are matters of pure speculation. It is apparent, however, that the highly trained workers cannot hope to maintain their wage advantage over the semi-skilled and less skilled workers. The tendency will be toward a realignment of wage rates. Whether this leveling will be up or down, it is impossible to say. At present, the writer believes that scientific management is making the relatively unskilled more efficient than ever before, and that they are generally receiving under it greater earn-

ings than ever before. It is evident, however, that the native efficiency of the working class must suffer from the neglect of apprenticeship if no other means of industrial education is forthcoming.

If generally increased efficiency is the result of scientific management, unemployment would, in the end, seem to become less of a menace. But during the period of transition, we should expect its increase. Moreover, the whole scheme of scientific management, especially the gathering up and systematizing of the knowledge, which was formerly the possession of the workers, tends enormously to add to the strength of capitalism. This fact, together with the greater ease of replacement, must make the security and continuity of employment inherently more uncertain.

Scientific management, then, like the progressive invention of machinery, seems to be a force urging us forward toward an era of specialized workmanship and generally semi-skilled or less skilled workmen. Here we glimpse the great problem with which its spread and development confront labor and society. What, then, is the solution of the problem thus presented?

I cannot believe that it lies in repressive measures. We surely cannot afford to give up the vast possibilities of increased productiveness which scientific management holds out. On the contrary, "our industries should adopt," and should be encouraged to adopt, "all methods which replace inaccuracy by accurate knowledge, and which systematically operate to improve productive methods and eliminate economic waste." The remedy, then, is not repression, but supplementation.

The need is a method by which the intellectual and moral content which the worker is losing through the destruction of his craft training and the loss of his craft knowledge can be restored to him. How can we secure this? It will not do, I take it, to demand this of scientific management. To attempt to limit specialization and restore the old apprenticeship system in the shop would mean to prevent to a large degree the productive effectiveness and the productive improvements which we cannot afford to forego. Moreover, to require that scientific managers themselves maintain training schools for all their workers, effective in a social sense,

would severely penalize and handicap, if it did not eliminate, the system.

Nor do we wish the training of the workers to be centered in the hands and under the control solely of the employers. It seems that what we really need, as a supplement to scientific management—so that we may avail ourselves of its beneficial possibilities and eliminate or minimize its possible evil effects—is an adequate system of industrial education, socially launched and socially controlled—an integral part of our public-school system. With such a system in vogue, we might hope, I believe, that what the workers lose intellectually and morally in the shop, under modern specialized workmanship, they would gain in the school, and that through this moral and intellectual gain they might become universally organizable and organized, and might develop policies and methods which, while not interfering with productive efficiency, would secure for them as a class improved conditions and a reasonable share in the increased social dividend which the development and spread of scientific management promises.

ROBERT F. HOXIE

THE DEVELOPMENT OF HOXIE'S ECONOMICS

I

It is not customary for economists to supply their would-be interpreters with convenient theories for explaining how they came by their results. Certainly Hoxie had no conscious intention of being so considerate; for he had in mind trade unionism, and not his own economics, when he elaborated his theory of development in terms of "the totality of impinging environmental conditions." But, since the theory has been set forth, alike it calls for verification and offers a challenge to its more universal application. This double demand can, perhaps, be met in no better way than by recording the persistent development of Hoxie's economics in terms of its material and intellectual environment.

But, in this connection, what do we mean by environment? All of us have eyes that see not and ears that hear not many of the things to which they are exposed. From the countless scores of sensations and impressions which the worlds of nature and social arrangements contain, each of us selects a modicum of his own. This is his world; it includes the phenomena which he must reduce to order; it embraces the facts with which his theories must prove themselves foursquare. Such are the diversities of gifts among us in observation, perception, and interpretation that each comes to possess his own environment.

Thus, at the very outset of our study, Hoxie's environment as a determining cause seems a contradiction, for he was one of its prime causes. Because he was different from other economists, the conscious environment which finds expression in his work was unlike theirs. He could not have hedged himself about with the pent-up doctrines of "the fathers" and have gilded refined gold in the subtleties of theory; for he was by nature no votary of tradition. He could not with more charity have surrounded himself with the wisdom of many schools and have formulated an eclectic body of doctrine which held them all in solution, for to

him the world of action contained more interesting problems than the synthesizing of established theories. He could not have discovered a few significant "forces" in the life about him and have hammered them together into a theory of society, for he saw all too clearly the bewildering complexity of economic life. He could not have applied himself to a small region of unexplored territory and have recorded his observations in a system of coordinate descriptive details, for he could not look for truth in a wilderness of miscellaneous facts. Because he was what he was, his environment was always expanding and the influences affecting his work always partial. Before observation had been completed, or system had been given to its results, the horizon invited. New facts, new viewpoints, new preconceptions, new methods, new aims, new problems crowded constantly upon him. In this continued process there are to be discerned three types of developing influences in terms of which the growth of his economic system must be stated.

The first and most immediate of these was the development of economic theory. In so new a science, concerned with rapidly changing phenomena, tradition sits lightly. A decade is likely to mark a distinct "period," and three or four of them to assume the importance of an "age." Hoxie's quarter-century in economics[1] brought him into contact with its literature in all its varied array. Throughout this period the classical tradition remained the dominant influence in political economy, though it was often and seriously challenged. The attack of Marxian socialism revealed the necessity of restatement, and several variants sprang off from the main stock. Among these the Austrian and the American productivity systems are only the most conspicuous. Conceived of at first as independent statements of doctrine, they rose and flourished, and it was not until recently that they betrayed unmistakable signs of reverting to type. The German "historical" influence for a time threatened the citadel; but soon a truce was struck by which the domain of theory was made immune to its

[1] Robert Franklin Hoxie was born April 29, 1868. His acquaintance with economic literature began when he was an undergraduate at Cornell University in 1891–92. His professional connection with the subject properly begins two years later, when he became a Fellow in Political Economy at the University of Chicago. He died June 22, 1916.

influence, and, with only a nominal overlordship, it was left free to exercise sovereignty in the surrounding "practical provinces," such as banking and transportation, whose virgin territory seemed to invite descriptive labor. In the early nineties only here and there did a voice attack the preconceptions of the science and insist upon the institutional and evolutionary character of its phenomena. But, as time passed, the number of these protestants increased, at least sufficiently to allow their division into a number of dissenting schools. To all of these influences Hoxie was more or less sensitive. Some wrote themselves indelibly into his work; others fascinated him for a time; and still others furnished convenient statements of economic truth and untruth against which to protest.

Typical of the larger variety are the influences exerted upon Hoxie's development by three prominent American economists, exponents of widely different schools. The first was Laughlin, the representative of the best traditions of classical doctrine. He conceived of the economic order as established upon natural laws, which he formulated in terms of individual competition. Although his categories were clear-cut and his statements of principles exact, he had little sympathy for doctrinaire refinements, and insisted upon the older tradition, that economics must vindicate itself in its application to the everyday affairs of life. The second influence, felt much later, was that of Fetter, the best representative of the "American psychological school." He insisted upon modernizing economics,[1] upon making its principles conform to the reality of modern industrial life. In this attempt he made the "individual in society" the focus of his study, sought a more adequate psychological foundation for the science, elaborated a new set of concepts, modified the theories of various schools to fit his purpose, formulated new ones when necessary, and wrought the whole into a wonderfully logical and coherent system. The third, and much the most persistent influence of the three, was that of Veblen, who stood almost alone as a searching critic of theory in its larger aspects. Hoxie knew him when he was formulating his indictment

[1] The school of economists of which Professor Fetter is the founder is frequently spoken of as "the modern school."

of the taxonomic character of accepted theory, protesting against its neglect of the salient aspects of industrial life, and pointing a way to the genetic study of institutions. Hoxie saw him in the process of revealing the importance of the technical and the pecuniary aspects of social life, coining terms in which others could voice with unction their criticisms of the economics of the schools,[1] and formulating principles that could be incorporated into the methodology of the "coming" economics.[2]

The second of the larger influences was the general intellectual environment. The strain in economic theory for a newer reality is but the reflection of the transitional movement in everyday habits of thought. At the beginning of the period the common-sense individualism of the middle of the century still firmly encompassed us. In our mechanical-mindedness we believed that the individual was "the architect of his own destiny"; that success or failure in all the affairs of life was a matter of one's own volition. Were the question one of the responsibility for a fortune, a poem, a theory, an accident, or a crime, we found in some individual the ultimate term of our quest. This habit of mind wrote itself into the whole of our institutional system. We found it alike in our courts of law determining responsibility for industrial accidents, in our religious creeds in their doctrines of salvation by faith, and in our educational policies in their theories of a free elective system. Even many of our economists believed that the specific responsibility of the individual in production could be definitely determined.[3]

[1] In a single article of Hoxie's I glean offhand the following Veblenian terms: "industrial" versus "pecuniary"; "taxonomic" versus "biologic"; "cumulative causation"; "putative"; "complete economic taxonomy"; "universal economic normalities"; "process"; "genesis." Doubtless a systematic search would reveal many more. The careful student will note that in more than one case Hoxie has enriched the original terms (see "On the Empirical Method of Economic Instruction," *Journal of Political Economy*, IX, 481–526). Those who know Hoxie's work do not need to be told that these expressions do not indicate servile discipleship.

[2] Two other economists deserve particular mention because of their influence upon Hoxie. They are Professors Herbert J. Davenport and Alvin S. Johnson. Of their influence Hoxie's writings bear evidence; but it cannot be so definitely particularized as can that of the three mentioned above.

[3] The student of economic theory, to avoid misunderstanding, must distinguish between the problem of how much under competitive conditions a unit of each of the funded economic factors can secure from the productive process, and the problem of

As a necessary complement we marked all our institutions with the label *ex naturae mundo*. We regarded social arrangements which had existed for the briefest moment in human history as of the immutable cosmos itself. Quite naturally, too, we clung to a mechanistic theory of industrial society, and believed that the whole could be resolved into parts without loss of identity or reality. But, although it came slowly and none too clearly to those who watched it, a quarter-century affected a great change in this. The discovery of environment was at last made; and, as a consequence, we developed an extenuating disposition to place the blame upon society, institutions, or even more vaguely "the system." With this discovery the natural world of laws began to give way to a social universe, filled with "arrangements" capable of being manipulated. And, as attention was diverted from the mechanical things of life, the idea of evolution was gradually accepted and particular acts and institutions began to be conceived of as inseparable parts of a closely connected whole. So it came about that explanations which had their ultimate source in a mechanical and individualistic natural system failed to satisfy the increasing number who were finding it difficult to accept such a fundamental hypothesis.

The third of these larger influences was the material environment. The uncertainty which we have just detected alike in economic theory and in intellectual attitude was in large measure a result of the accelerated development of the industrial system. Peculiarly enough, the England of classical theory and the Germany of the historical school have left no conscious mark on Hoxie's work. His material environment was that of contemporary America. A continent, possessed of unparalleled resources, had just been subjugated by the aid of the machine process. An aggregation of trades, processes, and markets was being forged into an industrial system. Through a network of institutions, themselves in process of being

how much under similar conditions it contributes to that process. The first problem is positive; if a determination of the contribution is associated with a problem of distribution, the second becomes ethical. The confusion of the two is almost inseparably associated with an acceptance of the theory of specific productivity. While intellectually this theory belongs to the nineties, or even an earlier period, it is peculiar in that its popularity came later.

created, these were coming to be a delicately balanced pecuniary system. On industrial lines, and impelled by the machine culture, society was being resolved into classes, and these into larger groups, which tended to dissolve into smaller ones, each conscious of its inalienable right to large pecuniary income. Individuals were beginning to become conscious of their group interests, the while they saw a threat in the assertion of the group interests of others. Change was everywhere. Wealth was increasing; accumulated capital was being invested and new capital values were emerging without investment; old industries were being expanded and new ones were springing up; the advance of technology was making obsolete productive processes which a moment before were new; and population was increasing to meet new pecuniary demands, bringing a babel of tongues and a motley of cultures.

Changes such as these defied expression in quantitative terms. The adjective "normal" seemed strangely inappropriate when applied to any aspect of the situation; in the perpetual newness of things all must be "natural" or all unnatural. Nor could the situation be expressed in static terms. It offered no disposition to return to an "equilibrium" after a "disturbing force" had disarranged the gear. It might well be that a series of actions and reactions was tending toward such a consummation; but if so, they were of negligible importance, for they could not stem the onward tide of the highly dynamic forces which were drawing industrial society into an unknown future. In fact, the whole system was so new that little could be known of the real forces at work; but amid the known, the mark of reality seemed much more legible in tendency than in existing fact. The less important "being" was swallowed up in the more important "becoming." First, static theory, and later the quantitative "dynamics" which was added to it, seemed foreign to the contemporary America of perpetual transition.

Such was the environment which Hoxie wrought for himself out of the materials at hand. Some things he saw which others would have missed; some things he missed which others would have seen; and many things he saw quite differently from others. Our account is unreal in presenting the economic, intellectual, and

material environments in sequence, for always Hoxie saw them all at once. However, an examination of his writings leaves little doubt that this is the order in which they were the dominant influences in his work. It is even more unreal in presenting in reasonably definite, even if complex, terms the environment which he was coming to possess. It fails to show the tortuous and laborious path along which he moved looking for light.

This conscious environment presents his problem and ours. His it was to elaborate an economic system consonant with it; with the economic theories of the various schools, which represent the impressions of the industrial system formed by acute observers and keen interpreters; with the general body of intellectual assumptions, which in any age are the ultimate terms of all acceptable explanation; and with the facts of life as, aided by these devices, he came to see them. Since his environment was a developing one, his problem was ever changing. It was intermittently simple and complex: simple, as he reduced his observations to order, and complex, as the entrance of new factors required fresh starts. Ours is the far simpler problem of testing the development of his system in terms of this unfolding environment.

For our task the evidence is all too meager. Hoxie's output, while large in quantity, is smaller than the facts of his life seem to warrant. He suffered from ill-health, even from his undergraduate days, and this interfered seriously with his labors. Since he was not of those "who affect to despise good teaching," the classroom imposed an even more serious burden upon him. There a large part of his very best work found only oral expression and, while its influence was not lost, its marks of identity are gone. A large part of his written work remains unpublished and therefore inaccessible. How much of this consists of studies in approximately final form and how much of attempts merely to clarify his thought through writing, it is impossible to tell. The latter was a favorite device of his, and from the evidence at hand it is a fair inference that his enlarging environment and changing viewpoint caused many a piece of work to be abandoned before it was finished. Our evidence, therefore, must be sought largely in the printed word. If the lack of completeness of its record forces reliance to be put

in inference rather than in direct testimony, we can only trust that the inaccuracies resulting will be corrected by the publication of the more complete studies which Hoxie left.

II

Like all things genetic, the record of the development of Hoxie's economics defies resolution into periods. So many are its strands that a line which strikes one at a natural point of cleavage cuts athwart many others. The different circumstances affecting his development and the different characteristics of his work are matters of varying proportions in the different periods of his life rather than of exclusive influence. It is, therefore, in the most inexact way, and with many qualifications, that the account below resolves itself into three overlapping periods.

In the first period Hoxie's environment was largely the economics of the schools. Of these he found the classical statement most acceptable, and he regarded Laughlin as its most competent expounder. In this period of stormy monetary controversy, a part of its doctrine, seemingly the most vital, was vindicated by its application to the problem of the day.[1] In the absence of negative evidence it was easy to take on faith the rest of so convincing a statement. Thus Hoxie was able to reconcile accepted doctrine with an early commitment to the principle that the laws of economics must have current relevancy. In view of this acceptance of the general scheme as well established and complete, the economist's task became the well-defined one of extending the application of laws to practical problems. Thus from theory as a general basis we find him making excursions into the fields of money, the tariff, and colonial policy. In all these early essays we note a searching analysis, a careful regard for the facts, a critical weighing

[1] As an undergraduate Hoxie accompanied Laughlin when the latter left Cornell University in 1892 to become head of the Department of Political Economy in the newly established University of Chicago. A year later he became a Fellow in economics in the latter institution, an appointment which he held for three years. Thus the dominant period of Laughlin's influence was 1891–96, the years in which Laughlin was so active in applying economic laws to the contemporary controversy over the monetary standard.

of evidence, and an exact statement of conclusions.[1] One of these exhibits ingenious originality in a striking disproof of the compensatory theory of bimetallism.[2] Yet, even in these early articles, a spirit of protestantism, as yet unaware of its objective, is evident. At first it finds adequate vent in piling up syllogisms to demolish the arguments of the followers of the false god of cheap money. Defending "universal natural laws,"[3] Hoxie's utterances burn with the indignation of righteousness. But Hoxie's conscious possession of eternal verity was short-lived, and, before he was done with the tariff, it had found a far more worthy object of attack.[4] As his studies proceeded Hoxie gradually became dissatisfied with classical theory, and in the end insisted that he had rejected the whole system. But not so easily could he free himself from its influence. Once rejected, it became a formidable body of doctrine well worthy of vigorous reaction on his part. More unconsciously its concepts had impressed themselves too deeply upon his mind to be obliterated by any mere logical process, and they affected his work to the very end.[5]

[1] The thoroughness and current value of two of these are attested by their inclusion in recently published books of readings in economics. "The Adequacy of the Customs Revenue System," originally published in the *Journal of Political Economy*, III, 39–72, is included in slightly adapted form both in C. J. Bullock, *Selected Readings in Public Finance*, pp. 425–48, and in Marshall, Wright and Field, *Materials for the Study of Elementary Economics*, pp. 847–53. A selection from "The Silver Debate of 1890," originally appearing in the same periodical, I, 535–87, is included in H. G. Moulton, *Principles of Money and Banking*, 220–28.

[2] "The Compensatory Theory of Bimetallism," *Journal of Political Economy*, I, 273–76.

[3] "The Silver Debate of 1890," *Journal of Political Economy*, I, 573.

[4] "The American Colonial Policy and the Tariff," *Journal of Political Economy*, XI, 198–219. Only in subject-matter does this article belong to this period of Hoxie's development. Both chronologically and in spirit it belongs to the second period.

[5] For instance, late in his career we find Hoxie insisting upon "market choice" or "market valuation" as the distinguishing mark of economics, despite the fact that he had accepted the general theory of "social process" and called himself an institutional economist (see "Sociology and the Other Social Sciences," *American Journal of Sociology*, XII, 746). This definition is very peculiar, for Hoxie certainly did not mean to exclude from the category of economics institutional studies, such, for instance, as the discussion of the cultural incidence of the machine process in T. B. Veblen, *Theory of Business Enterprise*. Again, although in later years he was

In the second period the general movements in thought came to dominate Hoxie, and in terms of them he began to see the complexity of the developing industrial society about him. To this end the circumstance of his life was drawing him. His interest in general economics was too keen to allow of his losing himself in one of its isolated fields, wherein, solaced by descriptive labor, he would soon have found himself beyond the point where the problems of theory would have bothered him. But, even had he been so minded, the demands of the introductory course upon one who took them seriously would have prevented so easy an escape. There he habitually met the American undergraduate, a very important part of his environment, and repeatedly made the customary discovery that the assumptions of theory did grievous violence alike to the common-sense of the times and to the economic world of reality as this young gentleman conceived them. At the same time problems capable of more direct statement in terms of human relationship were coming to the front, and for them the conventional statements did not suffice as they had for the monetary standard and for the tariff. These conditions gave zest to Hoxie's studies in theory, made him quick to catch the significance of Veblen's critical utterances, and impelled him to the conclusion that the methodology of orthodox economics was out of harmony with the dominant intellectual thought of the times. This conclusion exhibited itself both in a heterodox attack upon the accepted synthesis of doctrines and in an orthodox attempt to find a substitute for it.

In keeping with its incentives, this critical attack was partly scientific, partly pedagogic. It assailed general economics both as a formulation of doctrines and as a course of instruction. The first indictment, reiterating Veblen's charges and adding many counts of its own, protested against the attempts of classicists to formulate "a complete orthodox economic taxonomy,"[1] their

convinced that there were no general laws in economics, we find him as late as 1914 accepting the classical theory of the distribution of income into its traditional shares of wages, rent, interest, and profits (see "Trade Unionism in the United States," *Journal of Political Economy*, XXII, 476–77).

[1] "On the Empirical Method of Economic Instruction," *Journal of Political Economy*, IX, 491.

arbitrary dualistic classification of matters economic as "natural, normal, sanctioned," and "artificial, abnormal, questioned,"[1] and the arbitrary nature of their preconceptions. In his mind the last resolved itself into a double charge against the hypothetical character of principles and the undue simplification of life found in economic treatises. Conceiving of reality and abstraction as antithetical terms, he elaborated the former charge into an indictment of the science because of its abstract character.[2] The latter charge becomes a denunciation of the science for its failure to study the existing industrial system and to take account of the great technical and pecuniary changes which in recent years had completely transformed economic and social life.[3] These particulars it was easy to sum up in the graver and more comprehensive charge of irrelevancy.[4] The second indictment assailed the general courses of

[1] *Journal of Political Economy*, IX, 492. Hoxie repeatedly protested against the arbitrary antithesis between the "normal" and the "abnormal." We find this early protest voiced in his latest published work (see *Scientific Management and Labor*, p. 64).

[2] Hoxie repeatedly protested against the use of abstractions, seemingly oblivious to the fact that an abstraction is only a general truth, and that between the infinitesimal and the infinite there are a countless number of gradations of abstraction. The protest is peculiar in view of his search for relatively general truths and his own use of abstract concepts. It is difficult to think of an economist whose categories are more highly abstract than Hoxie's. To cite a single example, in his article on "The Demand and Supply Concepts," *Journal of Political Economy*, XIV, 412, by his own confession he uses the term "market" in "an abstract, generic" sense. His protest seems to be not so much against the use of abstractions as against other people's abstractions. The explanation seems to be that the confusion exists in his use of terms rather than in his thought. His real protest is not against abstractions, but against the irrelevance of the abstractions of the classicists.

[3] "The Demand and Supply Concepts," *Journal of Political Economy*, XIV, 340.

[4] In his criticism, though not consciously unfair, Hoxie was not always accurate in his representations of classical doctrine. In an example which is perhaps much too extreme to be typical he represents the laborer as being unable to follow the economist "in his complicated arguments that in the long run and on the whole the keenest competition among laborers brings the highest reward" (see "The Trade Union Point of View," *Journal of Political Economy*, XV, 352). This, however, may be unfair, for it is possible that Hoxie intended to convey nothing more than the state of confusion in which the economist's argument leaves the laborer. However, in passing judgment upon classical doctrines Hoxie fails to take into account the immediacy of the viewpoint of the general public and the very modest claims which most economists make for their principles. He seems, too, to fail to appreciate the necessarily quantitative character of the problem of market value determination.

instruction as concerned with matters alien to industrial life, as using methods which rob the subject of every semblance of vitality, and as failing to meet the proper end of teaching students to think in terms of their economic environment. In this connection he voices an early and vigorous protest against both the formal lecture and the textbook.

As a constructive complement to this criticism Hoxie elaborated a formal synthesis of economics. The outline of this, in the form of a scheme of instruction, fortunately was published.[1] On its pedagogical side it presents much that at the time was novel or even radical. It attempts to replace the formal knowledge of economic verbiage and the conventional sequences of its arguments with an intelligent understanding of its problems and principles in terms of the student's own experience and thought. For the traditional devices of lecture, textbook, and oral quiz, it makes use of informal discussion, empirical investigation, and the general use of problems.[2] By insisting that the proper path for the student is from knowledge to principles rather than from principles to knowledge,[3] it advocated a method which later, but somewhat inaccurately, became known as the "inductive" method. But, by its careful propulsion of the student along a preappointed and well-placarded way, it avoided the more serious objections which are urged against that method.

But of greater importance is the economic system revealed by ridding the scheme of its pedagogical garb. The first impression is the relevancy and reality of the whole. A discussion of the structure of industry gives due attention to the business unit, to business agents and agencies as functioning actualities, and to the pecuniary aspects of economic affairs. The influence of the general environ-

[1] "On the Empirical Method of Economic Instruction," *Journal of Political Economy*, IX, 514–26.

[2] Hoxie was one of the first to place general reliance in the problem method. Of course Sumner had preceded him by many years in the use of this device, but with the latter it was only a supplementary means of instruction. As to priority among Professors H. J. Davenport, F. M. Taylor, and R. F. Hoxie, it is impossible to speak with certainty without the facts. The question, however, is of no importance. There is every indication that each of the three developed this method independently, for their problems are of radically different types.

[3] Hoxie soon gave up this rather naïve antithesis, realizing that observation and speculation are inseparable complements in every intellectual process.

ment and the social nature of institutions are alike recognized. Yet, despite these and many like features, its appearance of articulate reality does not disguise the underlying classical system. The matter on organization is clearly introductory and is quite apart from the main body of doctrine. To the latter the historical and institutional matter which it bears is clearly extraneous. An examination reveals the basis of the system in the individualistic conception of utility common to all the classical schools. It discloses the problem of value as the central theme which gives unity to the whole. And, appropriately enough, a type of the traditional theory of distribution holds the place of honor in the scheme. The old and the new have been associated in a single system by clever, yet formal, contrivances. The lack of organic unity in the whole bears evidence of Hoxie's rapid growth. The irreconcilable elements which this cross-section reveals indicate that he was soon to discover that the synthesis he sought was not yet his.

This discovery was hastened by the accident of his career. At just this time he fell under Fetter's influence, and Fetter's system replaced his own as the appointed synthesis. The circumstances made this inevitable. Fetter's system appealed to his demand for relevancy by its conscious recognition of business agents and activities, by the striking similarity of its concepts to those of the industrial world, and by the appearance of a genetic method of treatment which its skilful historical introductions conveyed. Its reduction of actuality to psychological terms gave its conclusions a sense of finality. And, finally, the facile and logical way in which the processes, activities, and problems of modern industrial society grouped themselves into a single coherent body of doctrine convinced Hoxie that he had found here the unity which he sought. He accepted the system, and for a time its subtle analysis and keen logic satisfied his mind by supplying it with all the intellectual exercise it demanded.

But, after all, the acceptance of Fetter's system was but a passing episode in Hoxie's development. Though he understood it as few others have,[1] and became an accredited exponent of its

[1] A competent observer who was in position to know insists that only Fetter himself has excelled Hoxie in teaching the system with the compelling forward pressure of its logic.

doctrines of value,[1] Fetter's system was not for Hoxie's mind. His increasing demand for the genetic could not be stayed by Fetter's historical introductions, which Hoxie was coming to see were quite apart from the main body of his doctrines. His growing sense of the infinite variety of life prevented him from being satisfied with a unity found by reducing capitalism to a scheme of values. To him capitalism was much more than this; among other things it was a scheme of social arrangements which had received scant attention at Fetter's hands. Even in the most elaborate piece of work which he did under Fetter's influence,[2] there are evidences, not only of a breaking away, but of the introduction of elements incompatible with Fetter's hypotheses. Hoxie never formally renounced the system, and he did not use it as he did classical economics—as a body of doctrine against which to protest. Rather it gradually became a thing apart, a matter alien to his problem and to his conception of his function as an economist.

Meanwhile a theoretical basis for a third attempt at the solution of his constructive problem was being laid. In the development of his criticism, two points came to stand out clearly. The first was that the universe was a complicated affair, filled with an infinitude of things, and that science in its utmost endeavors could never reduce more than a fraction of this to formal statement. If, therefore, its work was to be intelligently done, there must be some definite test by which its problems could be selected. With a sense of social responsibility, and in lieu of a better, he found that test in the practical use to which its results could be put. The

[1] "Fetter's Theory of Value," *Quarterly Journal of Economics*, XIX, 210–30. This article is an authoritative interpretation rather than a critical appraisal, having received Fetter's approval before publication.

[2] "The Demand and Supply Concepts," *Journal of Political Economy*, XIV, 337–61, 401–26. This article furnished important evidence bearing upon the development of Hoxie's economics. Superficially considered, its importance seems likely to be underestimated. While originality and subtlety characterize its discussions, there is an overelaboration of matters quite simple and well recognized. Accordingly, its contribution to value theory is not to be ranked high. But more closely viewed it seems to be a Fetterian essay with a Veblenian introduction. A still closer inspection reveals Veblenian elements in the body of the discussion, which threaten at times to break through the Fetterian crust. In this and other ways it reveals in incipient form some of the elements which were coming to dominate Hoxie's later work.

second point was that the use of a wrong test, or of no test at all, was responsible for current systems of economics. They seemed rather overdeveloped vestiges of the schemes of other ages formulated to meet the passing problems of bygone days than attempts to give order to such phenomena as would serve current purposes. But, since the theories were convicted of irrelevancy when applied to the affairs of everyday life, why not reverse the process and make an analysis of the practical problem the point of departure in economic work?[1] But what was the problem which could serve as a starting-point for an elaboration of a system of general economics? Whether Hoxie made an exhaustive attempt to gather together all economic problems, discover their greatest common denominator, and reduce them to larger and larger problems, we do not know. But we do know that, empirically or intuitively, he reached the conclusion that their number was legion, and that a co-ordination and subordination of them into a hierarchical scheme was impossible. Smaller problems could be made to lose their identity in that of larger ones, but still the mass remained too heterogeneous to be dubbed with a name.[2] And so, since the logic of his viewpoint proved inexorable, Hoxie was forced to give up his notion of finding a synthesis of economics. A necessary complement was a renunciation of faith in the conventional introductory course, which at the time was the universal gateway to economics.[3]

[1] This does not convict Hoxie of confusing ethics and economics. To apply an ethical test in the selection of the task to be performed does not impart ethical characteristics to the resulting product. To insist that economics shall observe and classify particular facts and discover the laws governing particular phenomena is not to mark with an ethical label the ensuing economic formulations. As an economist, Hoxie manifested no concern with the uses to which his conclusions and generalizations should be put.

[2] Few economists have been susceptible to the whole mass of influences which pass as economic. Some of us have had grave difficulty in finding unity and sequence in the general introductory course in economics. But this covers the subject very partially. A good idea of its multifarious character is offered by a perusal of the descriptions of courses offered under the head of economics in our larger educational institutions, particularly such as foster departments of commerce and administration.

[3] If the introductory course in "general economics" is conceived of as anything more than an introduction to a number of different things, each more or less connected with industrial life, this theory leaves no place for it. One may still, of course, give a course in value theory, industrial organization, or social organization in its pecuniary

But if his theory of the initiation of economic inquiry robbed Hoxie of the general field, a complementary theory gave it back. In his critical work he had found a second source of irrelevance in the failure of economics to conform to the dominant intellectual beliefs of the day. Of these, the one which he considered most important was the tendency to explanation in terms of growth. So far as the idea of evolution had influenced the static assumptions of economics, it was to be despoiled of its meaning and to reappear in the meaningless concept of "dynamics." As for practical results, "The revolution in scientific thought," wrote Hoxie, "has in general produced in the field of economic reasoning nothing more serious than harmless diversions, such as are represented by the emphasis upon the relativity of economic precepts, erudite discussions of the evolution of terminology, and introductory essays upon the growth of modern industry."[1] Since he appreciated the significance of this idea, he saw that the solution of the problems in which he was interested called for change, and that change was effected through growth. But, in industrial society, growth, even if it be of the part, is of the whole as well; for the idea of evolution carries with it the kindred one of organic relationship. Perhaps from the standpoint of structure it was possible to divide the whole into parts and to study each in isolation; but if the viewpoint were functional, if institutions and agents were regarded as active and vital organs in society, it was evident that each existed, not in and for itself, but performed its appointed office for, and in relation to, the whole. As a consequence, the study marked out by a particular problem was not in a particular field; it was rather the study of the whole

aspects, but such courses are not properly in the domain of "general economics." On this point Hoxie was too much of a logician not to capitulate. From this time onward he seemed to lose all interest in the conventional introductory course. So long as this course followed traditional lines he asked his colleagues at the University of Chicago for relief from his share of the work. For a time he even went so far as to insist that there was no place for a general course covering a single one of the special fields, such for instance, as money and banking or the labor problem. However, as will appear subsequently, in later years a revolt against the extreme particularism into which he seemed to be drifting and a change in the character of the introductory work led to a renewal of interest both in the initial course and in the sequence of courses.

[1] "The Demand and Supply Concepts," *Journal of Political Economy*, XIV, 339.

of functioning economic society from the standpoint of the problem in hand.[1] These conceptions had for Hoxie the supreme value of pointing a way to the study of industrial society as a whole through the study of a particular problem.[2] For the first time he found it possible to devote himself to a specialized subject. With this discovery the end of a long quest and the beginning of protracted devotion to a single piece of work at last seemed at hand. And with it the development of his economics entered its third and last clearly defined phase.

III

In this newer quest of the economic cosmos in the individual problem, Hoxie found himself confronted at the outset by two tasks: the further elaboration of his methodology and the discovery of a particular problem that seemed likely to lead along the appointed way. To the former he first addressed himself.

The formulation of his methodology proceeded along the lines already indicated. It substituted a concept of society in organic terms for the loose notion of an aggregation of monadic individuals which neo-classicism seemed still to be assuming. This preconception carried the obvious implication of a close interrelationship between the parts of a developing whole. Singling out market value only as a convenient illustration, Hoxie said: "There is no single social fact, from the esoteric cogitations of the social philosopher down to the mud-sills of human experience, that may not

[1] For Hoxie's explanation of these views, see "Sociology and the Other Social Sciences," *American Journal of Sociology*, XII, 739–55, particulary the résumé on pp. 754–55. Hoxie's conceptions have much in common with those of the sociologists but were reached by a very different path. His concept of society and his idea of the interdependence of its parts is quite like that of C. H. Cooley in *Social Organization*. As to the unity of all social science and the claim of sociology to overlordship, he takes issue with them. Upon this point his argument is premised in the theory of the multiplicity and variety of social problems presented above.

[2] The method suggested here may be called "organic particularism" in contradistinction to the mechanistic particularism which characterized intellectual activity in the last half of the nineteenth century. The latter studies its object in isolation, the former the situation as a whole from the standpoint of its object; the latter looks for structural characteristics, the former for functional activities; the latter finds the reality of an object in itself, the former in its relationships, past and present, to other objects which make up its environment.

in some way, directly or indirectly, affect human choice in the market."[1] The selected problem, whatever it might be, through the process of "cumulative causation" had become associated with a complex and tangled economic situation. To understand that aright, analysis must ignore neither the present nor the past. Since the real importance of objects was not so much in their "being" as in their "becoming,"[2] the reality which the economist sought could be expressed only in genetic terms. Thus Hoxie came to an acceptance of a historical method.

But it took Hoxie little time to part company with the historians, for his history was not of the schools. To one in rebellion against the logical and coherent system of Fetter no solace was offered in a "social and economic" history, either of England or of the United States. Such treatises represented to him "a great deal of misdirected reading" and "much indiscriminate indulgence in mere historical narrative."[3] Lacking unity and coherence, they presented a miscellaneous amount of descriptive matter. Without a clearly defined objective the conventional history was "a hopeless tangle of relevancy and irrelevancy altogether without definite teaching."[4] As generally used, it was a travesty upon the historical method of the natural sciences which it made a pretense of following.[5] In short, at the hands of the economists, history had been stripped of its essential characteristic of recording the growth of the institutional system as a whole and had become mere descrip-

[1] "Sociology and the Other Social Sciences," *American Journal of Sociology*, XII, 746.

[2] Hoxie is almost Hegelian in his emphasis upon "becoming." The word appears frequently in all his later work. Typical examples are to be found in "The Demand and Supply Concepts," *Journal of Political Economy*, XIV, 344; "Trade Unionism in the United States," *ibid.*, XXII, 205; and *Scientific Management and Labor*, 5.

[3] "Historical Method versus Historical Narrative," *Journal of Political Economy*, XIV, 568.

[4] *Ibid.*, XIV, 572.

[5] *Ibid.*, XIV, 569. Hoxie seems to imply here as elsewhere that the problems and phenomena of the natural and the social sciences are such as to warrant an application to them of a common methodology. This not only ignores the real differences between the two, alike in phenomena and in the use to which results are to be put, but also overlooks the differences between the mechanistic and the organic sciences as well. Yet Hoxie's work shows quite clearly that he recognized these distinctions.

tion in chronological form. Its popularity Hoxie attributed to the warm reception always accorded the latest intellectual fad.[1]

In keeping with these ideas Hoxie's method contained two essential features. The first was an analysis of the current situation as a whole so far as it bore upon the problem in hand. The object of this was a discovery of the nature and elements of the problem and its more careful formulation. The second was a study of how the situation came to be what it was from the standpoint of the problem as thus formulated. Admitting that the current and the genetic accounts were complementary methods of analysis,[2] Hoxie insisted that the historical study must follow, not precede, current analysis. To him the "why" must wait upon the "what."[3] Yet he did not deny that the first was not complete until the second had been made, and that the genetic analysis frequently made it necessary to study the current situation anew. On the contrary, he held that each must be tested in terms of the other, and that the cycle must be repeated several times before anything like approximately correct results could be reached. Thus he decried generalized history, just as he had decried generalized economics. In this he insisted that historical work, to have current relevancy, must be based upon an adequate theory. Perhaps this is only another way of saying that it must be done intelligently.

In analyzing the current situation Hoxie insisted upon taking account of "all the facts" that bore upon his problem. He was not content to limit observation to the few easily recognized matters of objective reality, such as the careful reporter could not overlook. He included as well all the traditions, conventions, practices, and customs which make up our social arrangements.[4] He viewed

[1] *Journal of Political Economy*, XIV, 568.

[2] There is evidence both in "Sociology and the Other Social Sciences," *American Journal of Sociology*, XII, 739–55, and in "Historical Method versus Historical Narrative," *Journal of Political Economy*, XIV, 568–72, that Hoxie looked upon history, not as a distinct intellectual discipline, but only as a mere method of analysis, equally applicable to all the social sciences. However, there is no direct statement to that effect in any of his published utterances.

[3] "The Demand and Supply Concepts," *Journal of Political Economy*, XIV, 344.

[4] See "On the Empirical Method of Economic Instruction," *Journal of Political Economy*, IX, 488, 515, for an early recognition of the importance of studying such phenomena.

these as objective phenomena, possessing nothing of the ethical inevitability with which many economists have endowed them.[1] He regarded the system of law, the conventions of property and contract, and the customs lumped together as "the wages system" as "facts" which come under the economist's ken.[2] And, to this list, already formidable, he added the beliefs, prejudices, superstitions, preconceptions, and habits of thought possessed by groups and classes. He was conscious that the reaction of circumstance upon lay minds and the resulting bodies of immediate theory play a part in the world of affairs, often more important than the teaching of the professional schools. And, to grasp these objects of study properly, we must remember that Hoxie conceived of each in terms, not only of what it was, but also of what it was becoming.

Confronted with this complex range of phenomena, Hoxie found it impossible to obey the simple injunction to reduce his observations to order. The trilogy of "observation, classification, and generalization" was too simple for his material. Lest observation be of no avail or time be fruitlessly squandered, he found it necessary to formulate a theory of observation. He saw that his problem must be analyzed and his task marked out before he could begin

[1] It was doubtless this very insistence that, neither explicitly nor implicitly, should economics impute ethical character to conventional institutions, which so frequently led critics to charge him with condemning our social arrangements. They regarded such matters as the explanation of the antagonism of trade unionists to the legal system as implying a criticism of that system by Hoxie. Of course Hoxie was no more condemning than he was approving. His positive point of view led to a mere setting forth of the facts of the situation. The absence of the customary implied defense seemed to his critics to be an attack. Their criticisms are important only as condemning themselves of an implicit defense of the existing order, thus adjudging themselves guilty under the charge brought against him. For an interesting example of the state of extreme bewilderment in which Hoxie's positive work leaves one who has always taken our social arrangements for granted, see C. W. Mixter, review of *Scientific Management and Labor*, in the *American Economic Review*, VI, 373–77. Those who have known Hoxie intimately will doubtless agree that there was as little of the reformer as of the apologist about him. It is difficult to think of an economist so free of schemes of what should and what should not be done. If he was a reformer, it was only in the sense of desiring to see conditions bettered, and believing that a positive analysis of the situation was in itself a step toward that end.

[2] Review of Charles Stelzle, *Messages to Workingmen*, in the *Journal of Political Economy*, XV, 182; "The Socialist Party in the November Elections," *ibid.*, XX, 221.

looking for the particular things that properly belonged to his study.[1] That his quest should show the imperfection of the preliminary analysis was to be expected; for it was only by repeated trials that the truth could even be approximated. As for facts, one must be sure of their pertinency and that they were facts. Much of the material which the economist sought was beyond the pale of direct observation. He must rely to a considerable extent upon the testimony of men who had a personal interest in the subject of inquiry. In such cases direct testimony, always colored by the desire to obtain favorable publicity, was partially or wholly inaccurate. Repeated inferential tests were, therefore, absolutely necessary.[2] Finally, there was nothing more dangerous than

[1] An interesting example of Hoxie's method is furnished by his procedure in the investigation of the relation of scientific management to the conditions of labor. Before visiting the shops he spent several months in formulating a theory of observation and elaborating a questionnaire. The inclusion of relevant and the exclusion of irrelevant material, the systematic nature of the investigation, and the pertinency of the material to the real issues involved—in short, the characteristics which caused the study so generally to be regarded as valuable—are largely due to this period of preliminary study. See the questionnaire in *Scientific Management and Labor*, pp. 197–302. Yet despite their careful formulation Hoxie expressed keen regret that his time did not allow a revision of the theory and the questionnaire on the basis of his experience in the shops and a second investigation of the shops on the basis of the revised theory and questionnaire.

[2] In his studies in trade unionism Hoxie proceeded upon the theory that the published utterances of employers and unionists alike are intended for propagandist purposes and represent the situation neither as it is nor as the parties testifying think of it. He insisted that repeated interviews and the piecing together of many scattered bits of inferential evidence carelessly dropped by interested parties is the only method which insures even approximately exact results. In speaking of his own method, but with specific reference to his investigation of the Industrial Workers of the World, Hoxie said: "I attended its convention; ate, drank, and talked with its members; soaked myself in its factional discussions; haunted its headquarters; fraternized with its officers; and delved into its literature and history." See the discussion of "Syndicalism" in the *Proceedings of the American Economic Association* for 1913, p. 140. An interesting incident which attests Hoxie's skilful use of the "inferential" method may not be out of place. At a time when the I. W. W. was claiming a membership running into the hundreds of thousands, Hoxie walked into the office of St. John, the general secretary, and said, "Look here, St. John, I've got the goods on you. You have only 14,300 members." "You're a liar, Hoxie," replied St. John, "we have 14,310." When on the trail of something that he wanted, Hoxie was quite immune to personal rebuff. His inquisitiveness, often almost brutal, frequently gave strangers a very erroneous impression of his personality.

"partial but typical" instances. He was always unwilling to allow his conclusions to transcend the facts before him.[1] Unfortunately no detailed account of his historical method can be given, for he did not formulate it further than its propositions are contained by implication in the statements made above.

Before his methodology had received definite statement, Hoxie found in trade unionism the problem for which he was seeking. In the more general "labor problem" he found the "economic factors," which are the ultimate recipients of income in theoretical discussion, replaced by creatures of flesh and blood struggling in their several ways for shares of the world's goods. In the more particular problems of trade unionism he found involved in this conflict, not only the laws of value underlying "the distributive process," but practically the whole scheme of our social conventions. And, as he watched the struggle proceed, he saw that the world of ideas was an inseparable part of it. Accordingly it was in trade unionism that he attempted to study developing society.

To Hoxie the trade unionism of everyday reality found its existence in activities; and the essential characteristics of activities were imparted by the world of ideas whence they sprang. It was, therefore, to underlying presuppositions of action that he addressed himself. In successive studies he explained the "viewpoints" of trade unionism, and of its competitors, socialism and industrial unionism.[2] In each case his study is of the thought which finds expression in current activity, not of the theory of this thought which is recorded in books. His industrial unionism bears only a superficial likeness to French syndicalism; his socialism is the American variety which apes respectability. At first he was not

[1] All who knew Hoxie well will probably agree with the following statement by Professor Alvin S. Johnson, in the *New Republic*, VII, 248: "I know of no other contemporary economist who displayed so intense a zeal to understand the living facts of his science."

[2] "The Trade-Union Point of View," *Journal of Political Economy*, XV, 345–63; "Class Conflict in America," *American Journal of Sociology*, XIII, 776–81; "The Rising Tide of Socialism," *Journal of Political Economy*, XIX, 609–31; "The Socialist Party in the November Elections," *ibid.*, XX, 205–23; "The Socialist Party and American Convention Methods," *ibid.*, XX, 738–44; "The Truth about the I.W.W.," *ibid.*, XXI, 785–97; and the discussion of "Syndicalism," *Proceedings of the American Economic Association* for 1913, pp. 136–44.

content with the modest rôle of scientist and attempted to explain the viewpoints which he records in terms of the current technological situation. But gradually his faith in the all-sufficiency of this factor faded,[1] and his causal explanations either became more comprehensive or were omitted altogether. All of these studies, with perhaps the single exception of the first, are based upon a veritable multitude of instances, carefully collected, sifted, digested, and interpreted.

These detailed studies, however, were merely preparatory to a comprehensive study of the American trade-union movement which Hoxie next undertook. Unfortunately but two chapters of what Hoxie expected to be his significant contribution to the literature of economics were completed before a governmental investigation drew his attention elsewhere. After that was finished, death interrupted his labors before he could again seriously apply himself to this task. Fortunately, however, the two chapters published contain his general theory of unionism, the part unfinished consisting largely of the concrete details of verification.[2] While doubtless it would have been modified in detail by ensuing work, as it stands it points unmistakably the direction in which his thought was moving. Although this is his best-known and, perhaps,

[1] The theory underlying such explanations may be called the technological variant of the theory of economic determinism. Hoxie later admitted that he had attached too much importance to technology as a source of intellectual attitudes. While he did not put his modifications in writing, his later studies attest the broadening of his viewpoint. For instance, it is quite evident that a trade-union point of view is not wholly consistent with the theory of the non-unitary character of the movement which later he came to hold.

[2] In this respect it bears a striking similarity to the rest of Hoxie's work, all of which is characterized by its peculiar use of details. Although Hoxie's conclusions always came as the result of sifting an immense amount of facts, few of these find place in his published articles. He seemed to regard the use of details as a method by which to arrive at truth, and not as a means of communicating it to others. It was an affair of the workshop; not a mark of style. While in general Hoxie's articles reveal the course of his development, it is just this failure to record the details of his observation that makes it impossible to determine the processes by which he arrived at particular conclusions. His style is direct and logical; the paths which he trod are devious. It seems strange that a mind that required all the evidence before reaching conclusions was content with an attempt to convince others by the use of general statements. Yet this lack of particular instances habitually characterizes Hoxie's work. It is even found to some extent in his *Scientific Management and Labor*.

most valuable piece of work, it hardly seems necessary to examine it exhaustively here. Hoxie's own account is available in a space of less than forty-five readable pages,[1] and a careful interpretation by a competent critic has already been published.[2] Besides, our interest is primarily in the development of Hoxie's economics rather than in his theory of trade unionism. However, this interest demands a brief résumé of the essential features of the theory.

This general survey can best be presented in a bill of particulars. First, unionism must be studied from the standpoint of function. Only in its activities and the ideas back of them can the institution which plays its part in industrial society be found. Secondly, the source of unionism is to be found in "the totality of environmental conditions"[3] impinging upon the laborer. Thirdly, the forces leading to the development of unionism are largely those of the immediate environment. And fourthly, the institution is of a non-unitary character. As for a common object of endeavor "the union program . . . . with all its mutations and contradictions comprehends nothing less than all the various economic, political, ethical, and

[1] The chapters bear the general caption of "Trade Unionism in the United States," and are entitled "General Character and Types" and "The Interpretation of Union Types." They were published in the *Journal of Political Economy*, XXII, 201–17, 464–81. Perhaps it is more accurate to say that there are three articles, for Hoxie evidently regarded one of his articles on methodology, "Historical Method versus Historical Narrative," *ibid.*, XIV, 568–72, as the first article in his trade-union series.

[2] E. H. Downey, "Hoxie's Interpretation of Trade Unionism," *American Journal of Sociology*, XX, 170–80.

[3] Hoxie nowhere attempts to classify the factors in the laborer's world making for unionism and to impute to each its proper share of responsibility. In his early writings, as we have found, he stresses the technological environment, but there is much evidence that in later years he attached less importance to this, and protested even against the prevailing habit of regarding unionism as purely an economic affair. See "Trade Unionism in the United States," *Journal of Political Economy*, XXII, 472. Mr. Downey, who knows Hoxie's theory of unionism perhaps better than anyone else, sums up the determining environmental influences under five heads: (1) the workday environment, making for solidarity; (2) union tradition; (3) the immediate social *milieu;* (4) national characteristics; and (5) "the congenital variation of aptitudes which form underlying traits of human nature" (see "Hoxie's Interpretation of Trade Unionism," *American Journal of Sociology*, XX, 175–77). Since the article in which this appears was approved by Hoxie before it was published, we may assume his acceptance of it. It is of importance as indicating how far he had departed from his former adherence to the theory of technological determinism.

social viewpoints and modes of action of a vast and heterogeneous complex of working-class groups molded by diverse environments and actuated by diverse motives; it expresses nothing less than the ideals, aspirations, hopes, and fears, modes of thinking and of action of all these working groups."[1] Accordingly there is only "unionism and unionism"; there is "no unionism *per se*." If, however, we are still intent upon thinking of unionism as such, "it must be as one of the most complex, heterogeneous, and protean of modern social phenomena."[2]

Of greater moment to us than these propositions are the inferences to be drawn from them. First, there is the protest against the statement of the characteristics of unionism in blanket terms. The insistence upon adequate analysis and the resolution into types carries with it a denial of the validity of wholesale justification or condemnation of the institution. Secondly, the theory robs of all meaning the many studies which in mechanical terms have sought an origin of unionism. By its insistence that all of our types are essentially American, Hoxie's theory denies them genetic connection with the unionism of other times and places. Even if the sequence connecting a contemporary American union with one of the England of a century and a half ago were unbroken, Hoxie would deny causal antecedence to the latter. He would insist that its existence was so largely due to the compulsion of current necessity that the force of tradition was negligible by comparison; and he would show that the unionism of today, despite a formal likeness and an unbroken connection, is an affair very different from its prototype.[3]

[1] "Trade Unionism in the United States," *Journal of Political Economy*, XXII, 204.

[2] *Ibid.*, XXII, 205.

[3] The thought here indicates quite clearly the difference in intellectual terms between the "historical" and the "genetic" schools. The former sees the objective thing called unionism, assumes that its identity has always remained intact, and looks for its origin. The latter sees a functioning whole which it calls unionism, assumes that, as society has developed, the functions and, therefore, the identity of the institution have changed, and seeks for an origin in the circumstances which have imparted its definite functioning properties. Hoxie's theory makes clear that the continuity which the historians have found is one of structure, which is impertinent if we accept the view that the reality of unionism is functional. It is needless to say that in the light of his view such a question as the relation of unionism to the mediaeval gild could never have arisen.

Thirdly, the theory is a cleverly masked but adroit criticism of much of the current work in trade unionism. Here many studies have been concerned with a mere aggregation of the facts in some mechanically distinct part of the larger field. The theory underlying these endeavors has been that description must precede generalization, that the facts must be massed before conclusions can be drawn from them. Quite cleverly Hoxie challenges both the studies and the theories underlying them. He sets forth a series of conclusions to be appraised in the light of these descriptive studies. The result is the surprising one that the conclusions remain alike unchallenged and unverified. The studies can be used neither to prove nor to disprove Hoxie's thesis. In their glaring impertinence they are convicted of being without relevancy when applied to the primary task of throwing light upon the nature of unionism. Clerical exertion, no matter how heroic, is possessed of no magic virtue that in itself confers value upon its labors. Thus Hoxie reveals the need of an adequate theory to guide work in this field, the while he offers suggestions for a working methodology.

The incomplete character of this work gives it its place in economic literature. Had Hoxie completed the study of trade unionism, in all probability he would have been accounted a laborer in a special field, and would have escaped the opprobrious epithet of "theorist." But, as it chanced, his significant contributions to trade unionism are theories which are concerned with the whole economic situation. And, in these theories, the matters most worthy of recognition are concerned with methodology. Thus one who set out to discover a system found instead a method—a method which may, perhaps, enable others to achieve the goal he could not reach.

True to the course of its development, the close of Hoxie's career reveals his thought in process of flux. New interests were crowding into the field of his attention, tendencies which for a time had guided his labors were undergoing modification, and old interests, seemingly eclipsed, were re-emerging. There is some evidence that the study of scientific management was pointing to an analysis of business activities and processes as a means to the

elaboration of the theory of trade unionism. Other evidence supports the conclusion that he was coming to regard trade unionism as too large and cumbersome a subject for coherent treatment and was considering confining his attention to a small part of the field. This atomic drift of his thought is implicit in his oft-repeated statement that in so modest a subject as scientific management there was "only scientific management and scientific management," there was no "scientific management *per se*." Perhaps it was in reaction against this extreme particularism that in the last few months of his life he revived his interest in the general introductory course and to a smaller degree in the sequence of economic courses.[1] But these tendencies are vague and somewhat contradictory. It is doubtful whether Hoxie himself could clearly have defined them or have predicted where they were leading him. Whether they were mere temporary reactions to an immediate environment, or new forces which had found a permanent place in his scheme of things, it is impossible to say. If they marked the beginning of the fourth period in his development, certainly the period is not clearly enough defined for separate exposition.

Thus as we approach the end of our inquiry, we find ourselves unable to answer its essential question. Had Hoxie succeeded in finding himself as an economist? Did his premature death cut off the fruitage of a system which at last he was establishing, or did it cut athwart the course of his development? Did it interfere with the elaboration and verification of theories which had already been presented, or did it end an experience through that arch "whose margin fades forever and forever" when one moves? Perhaps it was the first, and the loss may be the social loss of an articulate and adequate theory of trade unionism. Perhaps it was the second, and economic science is the loser in the incompleteness of a methodology of genetic economics, which further adventures in quest of his goal might have led him to complete. But we shall never know.

[1] Hoxie's interest was aroused, not by the conventional introduction to general economics, against which he had rebelled years ago, but by the course which just now is in process of being realized at the University of Chicago. This attempts a study of the organization of society from the historical standpoint, and puts its emphasis upon the framework of economic institutions.

IV

The career which we have just sketched is one of the most interesting in contemporary economics. It presents the bewildering problem of a man, possessed of all the necessary intellectual equipment and applying himself diligently to his task, yet failing to add an elaborate piece of work to the literature of economics.[1] The result is chargeable to a possession, not of too few, but of too many, gifts. With less of a sense of relevancy, Hoxie could have wrought an elaborate work in accepted theory. With a less comprehensive range of observation, he might have selected dominant factors from his environment and made of himself a system-builder. With smaller regard for larger meanings, he might have made an exhaustive study of some field of fact. But the yearnings of the explorer for new intellectual fields and an honesty of purpose which made him a seeker for the whole truth gave him both the explorer's disregard of personal consequences and his accustomed reward. He failed to possess himself of all that he saw, and behind him will come the pioneers who will be the appropriators.

The fuller meaning of the career which has just been sketched defies formal statement. On its intellectual side it made a substantial contribution to the literature of economics. Critics will assign value to the earlier studies in money, the tariff, and colonial policy. They will appraise much more highly the later contributions to the pedagogy of economics, the literature of scientific management, and the theory of trade unionism. They will doubtless come to appreciate the marks of originality attaching to the outline of a methodology which Hoxie came unintentionally to formulate. How high these values will be it is beyond the province of a mere interpretation to declare. It can only be remarked that the critic who essays to find in Hoxie's work as a whole a coherent economic system is doomed to disappointment. He will find sufficient material for his purpose, but a careful analysis will show that

[1] The only book which Hoxie completed was *Scientific Management and Labor*, published just a few months before his death. It is hardly fair to Hoxie to call it a volume, for it contains only 136 pages of text, and was regarded by its author as a mere provisional statement of his views. Circumstances over which he had no control compelled the early publication in tentative form of what Hoxie intended later to elaborate into a comprehensive study.

the various studies are on different intellectual planes, and that between them there is the healthy inconsistency which is the surest indication of intellectual development. He will have to content himself with regarding Hoxie as the focus toward which converged all the forces which are tending to create a modern system of economics.

On its personal side the career is even more interesting. It furnishes the example of a worker who had too much respect for his materials to satisfy himself with anything but the most craftsmanlike performance. It reveals the scholar, submerged in the patient student, ever looking for further truth, and never assigning to his conclusions more than tentative statement. It exhibits the adventurer, the man who must "ride into the wind" seeking new and yet newer things. It shows the cosmic protestant, voicing discontent against artificial systems and bent upon erecting one true to multiform reality. If its larger tasks were left undone, it was the inevitable penalty of titanic attempt.

Thus we come to an end of an attempt to explain the development of Hoxie's economics in terms of "the totality of environmental conditions" impinging upon him. Our quest has shown that Hoxie's own theory explains all we wish to know, with the single exception of the still unknown factor of Hoxie.

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ROBERT F. HOXIE: INVESTIGATOR AND INTERPRETER

It is probably no overstatement to say that modern industrial problems and the part played by the trade-union movement have not been thoroughly understood or accurately examined and interpreted by a large number of our economists and sociologists. In the past too much attention has apparently been given to the study and application of previously conceived theory to industrial conditions and not enough to truly scientific investigation for the purpose of discovering and analyzing the facts.

During recent years an evident change has taken place in the academic understanding and viewpoint; less time has been devoted to weighing every industrial or trade-union activity or policy in the scales of sociological or economic theory, and a greater effort has been made to discover and interpret the underlying causes which furnish the very foundation of the human problems arising from modern industry. If we are to discover the facts, and if these are to be intelligently interpreted, it is necessary to separate and analyze all of the factors in the problem, and to have at our disposal well-defined scientific methods by the assistance of which dependable investigations may be made and intelligent interpretation given.

Perhaps in no field of the industrial problem has there been less extensive scientific study than in the one occupied by the trade-union movement. There has been some sympathetic examination by a few men of exceptional training and ability. It is true that the aims and policies of the trade-union movement have not been without a measure of intelligent understanding in the academic world, but it is unfortunately the fact that the trade-union movement in its true significance has had but few competent interpreters in the scientific group.

Within recent times, a few scientifically trained investigators and educators have carried out in the field of trade-unionism most valuable research work, which has supplied us with a wealth of historical data and in addition has greatly increased our knowledge

of the structure and function of trade-unions and employers' associations; but, unfortunately, little work of a truly scientific character has been done in the study and interpretation of the fundamental psychology which so profoundly influences the attitudes and viewpoints of those who are directly affected by our industrial problems. The wage-earners, as well as the students, have profited greatly through the assistance which has been given by those who have studied the anatomy and the history of trade-unionism but what was most urgently needed was the assistance which would come from the purely scientific investigation and interpretation of their problems.

In this country, Robert F. Hoxie was successful to a remarkable degree in discovering the character and the underlying causes of our industrial problems, particularly their human elements, and in interpreting these in a purely scientific spirit. The influence of his life's work was of such a character that the trade-unionist, the educator, the employer, and that body which we refer to as the public will richly profit for many years to come. He succeeded in charting out unknown seas in the world of industrial activity, and in preparing these charts in such a manner that they are now available to all others who desire to carry on further explorations.

In connection with the great work which he accomplished, the valuable investigations which he made, and his university teaching, he apparently had no economic, industrial, or sociological theory to defend. He was engaged in an effort to develop adequate scientific methods of research and investigation, and when the facts in any particular field of inquiry had been discovered, to analyze these minutely and state the results of the analysis coupled with their interpretations and their implications.

His lectures at the University of Chicago may not have immediately and directly affected the trade-union movement; but unquestionably their influence upon the students will have a most profound and far-reaching effect, for a body of men and women have been made acquainted with a new point of view, and have been equipped to carry on effectually the work of scientific research by being brought into personal contact as far as possible with existing conditions as well as with economic and sociological theory. These

classroom experiences are of such importance and supply us with such a well-defined example of Mr. Hoxie's methods, that they cannot escape consideration in a review of the results of Mr. Hoxie's life-work.

Mr. Hoxie not only gave his students instruction in economic and sociological theory and the history and functions of trade-unions and employers' associations, but he also brought them into actual contact with the various phases of the trade-union movement which were to be found in such an industrial center as Chicago. The recognized leaders in the trade-union movement were brought before the students for the purpose of expressing their views and their understanding of their problems; and the representatives of employers' associations and their attorneys came likewise. These men were questioned by students under Mr. Hoxie's guidance. They were called upon to undergo the most searching cross-examination, and these methods made it possible for the students to secure an altogether different atmosphere and understanding of the industrial problems than could have been secured from any textbook or series of classroom lectures.

He was training his students to search for the truth and to grasp it, and, what was of utmost importance, he was educating them in the methods through which the chaff could be separated from the sound grain so that the truth and the substance could be discovered, analyzed, and interpreted.

The industrial problem, because of the human element which enters so largely into it, and the strong appeal to the sympathies which it presents, makes unbiased investigation and interpretation most difficult. Recognizing this, Mr. Hoxie applied the most rigorous rules in his work to prevent himself from being influenced by any factor except the truth which he was endeavoring to discover.

This quality was well illustrated by an experience which the writer had during the investigation of the relationship of scientific management to labor which Mr. Hoxie made for the Commission on Industrial Relations. It had become advisable to learn the personal experiences and views of the workers in a large establishment where partial trade-union organization existed. It was

determined to secure from the firm a list of those men who were considered most satisfactory and of those who were considered most unsatisfactory; and also from the officers of the several unions whose members were employed there, a list of the men whom they considered the most loyal and active, and of their most indifferent or unreliable, members. It was decided to interview these employees singly and in private, each investigator to work alone. A comparison and analysis of the notes was to be made only after the investigation had been finished. To prevent any bias in the investigators' minds and to keep them in an atmosphere where their undivided thought would be given to discovering exactly what was in the minds of those being interviewed, Mr. Hoxie insisted that at the close of each day's investigation there should be no discussion of what had been discovered or secured by the investigators. It so happened that both investigators encountered a condition of an extraordinary character during the first day's work, a discovery which was profoundly significant; but Mr. Hoxie gave no evidence of the knowledge he had secured until the investigation had been completed and the notes were being analyzed.

To have adopted any other policy than the one pursued under the circumstances would have resulted in a more or less partial and incomplete investigation. What was necessary to obtain was what lay closest to the worker's mind, rather than any evidence which would tend to substantiate something which one of the investigators might have desired to prove or disprove. Only by keeping each investigator's mind free from any external influence or from any predetermined purpose during the investigation, and concentrating wholly upon the one task of securing exactly what lay in the worker's mind, was it possible to cover all of the ground presented by the opportunity.

In his investigations of any industrial problem, as far as individuals were concerned, he employed the Socratic method, believing that this was the most effective in securing practical and dependable results, and this same method was applied as far as possible to his investigation of the facts connected with trade-union activity or policy. Mr. Hoxie's questions were always practical as well as pointed. Are agreements between trade-unions and employers

which regulate the terms of employment advantageous to the wage-earners, to the employers, and to the public? If so, why? If not, why not? The answers to these questions by trade-unionists, employers, and publicists supplied the outlines of the ground which must be examined to secure the facts and to furnish avenues of investigation which otherwise might be most difficult to discover. Do such agreements tend to establish the principles of democracy in the industry? Do they serve to give the contracting parties a more accurate understanding of each other's problems and viewpoint? Do they tend to establish peace in the industry? Are they of temporary or of permanent value? If such agreements are of value, in what direction does their greatest value lie? Do they tend to increase or minimize the industrial struggle? Does their influence tend to build up larger and more powerful organizations of workers and employers? Are they educational in their influence? Do they tend to create a greater sense of responsibility on the part of trade-unionists and employers? Is their form or the spirit with which they are entered into most important? Can such agreements operate advantageously where there exist considerable differences in the degree of organization and discipline maintained by the contracting parties? Is their general influence such as to warrant approval?

It was through such a series of questions, appropriately applied to every phase of the industrial problem, that the ground to be explored was uncovered and the first rough map prepared, from which he was later enabled to make those extensive and minutely detailed examinations and analyses which were characteristic of his work.

These studies of trade-unionism which Mr. Hoxie made were far deeper than an examination of trade-union history or anatomy, or the analysis of trade-union policies and laws. He attended conventions of the American Federation of Labor and of other trade-unions for the purpose of studying the trade-unionists in action. He interviewed the prominent delegates for the purpose of learning the reasons which prompted them to assume the attitude they did toward certain important questions discussed during the sessions. He acquired an extensive acquaintance with the recog-

nized leaders of the movement, and then, to offset the influences of this group, he formed the acquaintance of the active spirits in the ranks. He secured their own view of their problems, as well as that of their leaders. He attended meetings while strikes were in progress and talked with pickets while on duty and afterward. He was present in court when trials arising from industrial disputes were in progress. He met the attorneys for both parties; he talked with the judge. He continually searched for the underlying factors which moved the workers in their activities.

It was through such methods as these that he became so thoroughly acquainted with the publicly expressed opinions and privately entertained views of those taking an active part in the employed and employing groups in the industrial world. In this manner he succeeded in discovering the truth and the essential facts which were necessary if an accurate, comprehensive, systematic, and articulated presentation of the problem was to be given.

Although he was ever searching for additional facts and studying the objective effects of our industrial system, the principal object which he had in mind was the discovery of the underlying causes. It was his conviction that no intelligent understanding of an industrial problem could be secured until the basic causes had been discovered. He was much more interested in the discovery of these causes than in studying their effects. As a result of this purpose which guided him, he was remarkably successful in giving definite form and substance to many phases of the problem where but hazy outlines had previously existed.

The changing forms of policy adopted by trade-unions and employers' associations interested him mostly in that they afforded an opportunity of discovering and studying the causes which had influenced their development. He persistently sought to discover the motives which influenced the groups in the determination of their policies and their form of organization. He deemed it essential to discover the part which was played by the character of the industry, the quality of leadership, and the temperament and viewpoint of the group. It was essential that an accurate analysis should be secured, so that it would be possible to demonstrate to what degree the trade-union policy was shaped by the employers'

attitude and the extent to which employers modified or altered their policy because of some position taken by organized labor.

The trade-union movement presented a complex rather than a simple structure to him. Some organizations were comparatively conservative and business-like in their methods, some were thoroughly committed to the policy of agreements with national associations of employers covering the terms of employment for definite periods. Others, while equally in favor of such agreements with employers, were strongly disinclined to enter into those of a national character, but, instead, insisted upon having local agreements only. There were other unions which did not believe in trade agreements. Some unions were radical in their program, some were revolutionary in their character, while others seemingly placed more dependence upon legislative effort than upon direct dealing with the employers.

Why did these differences in policy exist? Once the cause for their adoption had been discovered and accurately analyzed, it would be possible to understand more thoroughly and accurately certain fundamental problems arising from the relationship of employer and employee. Such was his program.

The preparations which he made for his investigation of scientific management in its relation to labor and the methods which he applied during the investigation supply an excellent example of the thoroughness with which he carried on work of this character.

Before making the actual investigation for the determination of the facts, he made a comprehensive study of all that had been written and publicly spoken by the leading representatives of scientific management, and the leaders of the trade-union movement, these being the forces who favored or were opposed to scientific management. As a result of this preliminary study, he was able to distinguish and separate over a hundred distinct claims made by the scientific management group, and approximately an equal number of charges which had been made against this new system of production by the trade-unions.

After compiling these two lists, he presented the claims of the scientific management group, as he had prepared them, to the recognized leaders of that group for their personal examination and

criticism, and for such modifications or alterations as they should deem necessary in order to state accurately their claims and their views.

A similar method was adopted with the list of charges against this system of production which had been made by trade-unionists. These were submitted to the leaders of the American trade-union movement for the same purpose for which the claims in favor of scientific management had been presented to the leaders of the scientific management group. This placed him in possession of the authoritative claims and charges of the respective parties. He therefore held, before beginning the actual work of investigating, the authoritative statements of the opposing parties in such form that their accuracy could not be successfully challenged.

These two lists in their final form were then compared for the purpose of discovering the vital points of difference which existed between them, after which a list of questions was prepared, the answers to which, when accompanied by the necessary evidence, would determine the accuracy of any charge or claim which had been made. This questionnaire, which contained some 700 separate points upon which information was desired, supplied a mass of dependable information upon which to base conclusions.

Mr. Hoxie realized that the questionnaire in itself was insufficient to discover all of the vital facts. Something more was necessary, this being the personal contact of the investigator with the problem, the opportunity of studying the system in operation. He decided that, before submitting this questionnaire to an employer in whose plant scientific management had been introduced, he would first personally inspect the plant and secure first-hand information from those employed in the administrative department, in the planning-room, and in the shop itself. Realizing the danger of personally formed opinions and of failure to grasp all that came to his notice, and desiring to prevent as far as possible the formation of erroneous conclusions, he insisted, before undertaking the field work, that he should be provided with two experts, one representing management and personnel and the other representing labor. In their selection the field was thoroughly canvassed, and the experts were accepted only after having passed

careful tests as to their reliability and knowledge and their standing in the respective groups from which they were chosen.

These experts served as a check against oversight or false conclusions, and they provided the means of placing the chief investigator in contact with more phases of the problems presented in each establishment investigated than could have been the case had Mr. Hoxie worked alone. Every point of importance which had been encountered was discussed and carefully analyzed and weighed before it was accepted.

The method which he adopted in this investigation was practical, comprehensive, and certain of securing the information required for the examination of the question from its several angles. It is because of its thoroughgoing nature and scientific accuracy that the report which he submitted has proved of such great value.

Throughout the investigation he was governed by the thought that it was not his purpose to prove or disprove any theory, but to secure the facts, present these in systematic and comprehensive form, and compare the conditions which were found to exist with the claims and the charges which had been made. The method, the form, and the spirit of this investigation are of invaluable assistance to those who are studying and endeavoring to interpret our industrial problems.

Mr. Hoxie believed that we stood in greatest need of the scientific interpreter. He aimed, not only to provide the means for the scientific study of every phase of the problem, but, in addition, to map out the methods required for the purpose of giving sound interpretations of the conditions discovered.

A few days before his death he said in a letter to the writer, "I have come to feel very strongly that it is the whole social environment that influences men, and that the most effective influence, after all, is what we call the educational. Men are no doubt most strongly influenced by the material forces which touch them, but few men are capable of interpreting the meaning of these material forces. What we are in need of more than anything else, if we are to have social progress and social betterment, is interpretation."

His mental poise was that of the true scientist, but coupled with this was a keen love of justice, deep human sympathy, and a rare ability to grasp and understand the underlying motives which influence men. In his work, he demonstrated remarkable powers for minute analysis and a rare ability to investigate the complicated human problems connected with industry. He was able to separate these so that they could be examined apart and also in their relation to each other. The personal investigation and contact with the problems which he was studying had enabled him to grasp much which lay beyond the printed page and the spoken word and to discover the frequently indistinct or confused trails which, when followed up, led to the truth.

To the trade-union movement one of the most valuable features of Mr. Hoxie's work was the purely scientific study which he made of the movement itself and of its problems. The methods by which he accomplished his work and which he transmitted to a large number of students cannot help but prove of tremendous value to the investigator and interpreter of our industrial problems as a whole.

He was able to demonstrate effectively that the historian and anatomist of trade-unionism must be supplemented by the psychologist, if any accurate understanding of the human factors in the industrial problem is to be reached.

The result of his life-work has been a better and broader understanding of the problem and a more intelligent appreciation of its character. Investigators in the field of industrial problems will be profoundly influenced through the methods for scientific research which he developed.

As a scientist he contributed largely to our fund of knowledge; as a psychologist he supplied a viewpoint which had been but dimly seen before; and as an interpreter he gave an understanding of the innermost motives, as well as the more obvious ones, which influence men in their relationship of employer and employee.

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NOTES

BUYING SOUTH AMERICAN GOODS AS A FACTOR IN SELLING TO SOUTH AMERICA

Along with all the other ways proposed to increase United States trade with South America, it generally is said that if this country wishes to sell more wares to South American countries, it must buy more from them. The claim is backed up by the argument that it is natural for any people to buy most largely from those foreign markets to which their own products can be sent in exchange, and any doubting Thomas who may appear is asked to consider the trade activities of our great European rivals. Those countries, we are told, are the big buyers of South American products and, therefore, imports of British, German, and French goods have exceeded those from the United States in most South American markets.

If the argument is sound, facts to prove it ought to be found readily. For instance, if the United States takes 30 per cent and Germany 20 per cent of Brazilian exports, one would expect to find about the same proportion of United States and of German goods in the import trade, provided buying is the determining factor in selling. Similarly, if Brazilian exports during the last thirty years have increased threefold to the United States and only twofold to Germany, something of the same rate of progress should appear in growth of imports from those two rivals.

A survey of the trade between some of the South American countries and the four great competitors, as given in Table I, will show whether buying wares from these countries has determined the extent of sales to them. Argentina, Brazil, Chile, and Venezuela are chosen because they are typical of the different positions, economic conditions and commercial relations existing in South America.

Some of the most significant facts shown by these statistics may be noted as follows:

1. For many years the United States has bought much more from Brazil than from Argentina, and as recently as the 1880's sold to Brazil more than twice as much as to Argentina. Lately, however, the Argentine market for United States wares has been 50 per cent larger than the Brazilian, in spite of the fact that the United States is the best market

for Brazil and a poor market for Argentina, taking more than four times as much from one as from the other.

2. France, for a long time, has bought more than the United States from Argentina, but France steadily has lost ground when compared with the United States in sales to Argentina; and where French goods once stood first in Argentine imports, seven-fold greater than imports from this country, they are now far outranked by United States wares.

TABLE I

DIVISION OF TRADE OF TYPICAL COUNTRIES, 1881–85 AND 1908–12

(Average Annual Values for Five-Year Periods; Values Expressed in Thousands of Dollars)

		Argentina	Brazil	Chile	Venezuela
I. *United States:*					
1881–85	Exports to	$ 3,737	$ 8,734	$ 2,346	$ 2,563
	Imports from	5,107	48,320	964	6,246
1908–12	Exports to	47,112	31,126	12,897	4,303
	Imports from	24,221	115,611	20,896	7,243
II. *United Kingdom:*					
1881–85	Exports to	22,803	32,757	11,476	2,494
	Imports from	5,648	27,006	14,296	1,251
1908–12	Exports to	106,034	63,249	35,254	3,864
	Imports from	90,615	49,143	51,237	1,457
III. *Germany:*					
1881–85	Exports to	2,385	3,206	1,106	Not
	Imports from	7,579	798	3,045	specified
1908–12	Exports to	54,667	37,336	28,496	2,535
	Imports from	43,445	41,170	25,201	2,673
IV. *France:*					
1881–85	Exports to	25,323	15,719	6,021	1,375
	Imports from	34,430	21,464	4,420	3,985
1908–12	Exports to	33,314	21,312	6,246	1,292
	Imports from	36,283	25,974	5,992	5,706

3. The United States generally has bought twice as much as the United Kingdom from Brazil, but after more than a quarter of a century of this condition, Brazil still buys more than twice as much from British as from United States merchants.

4. Thirty to forty years ago German purchases from Brazil were of no account when compared with those made by the United States, and now they are only a little more than one-third as large. Yet German goods sent to Brazil, once less than two-fifths as valuable as those from the United States, now exceed ours by several millions of dollars annually.

5. Purchases from Chile have increased since the period 1881–85 in about the same way for both the United States and Germany. At the

outset the United States sold to Chile more than twice as much as Germany. Now the tables are turned.

6. Venezuelan exports generally have gone in largest amounts to the United States and France. The former, for example, has taken five times and the latter two to three times as much as the United Kingdom. Yet Venezuelan imports from the United Kingdom generally have rivaled closely those from the United States and have been two or three times as great as the imports from France.

7. During the period covered by the statistics, purchases from the four South American countries increased by $107,000,000 for the United States and $100,000,000 for Germany, but sales from the United States increased by only $78,000,000 as against $116,000,000 for Germany.

8. From the four South American countries considered, the United States bought, on the average, annually in the period 1908–12, $55,000,000 in excess of what Germany bought, yet German sales were $28,000,000 in excess of those by the United States. When compared with the United Kingdom, the United States is only $25,000,000 behind in purchases of exports, but is more than $110,000,000 behind in value of imports furnished to these countries.

Other similar points may be drawn from the table, but these serve to show clearly enough that there has been *no direct relation* between the value of goods bought from a South American country and the value of goods sold to that country by any of the great commercial rivals. The indirect influences of buying or selling then must be the only lines of connection. The chief indirect ways in which buying may influence chances to sell are through the effects of active buying on general prosperity in the producing regions, and the effects of large cargo offerings on shipping facilities.

It is self-evident that the more readily and profitably Brazil, for example, can sell large, and larger quantities of coffee, rubber, cacao, and other staples the greater the values of foreign wares which Brazil can afford to import for consumption. But if the greater facility and profits in disposing of larger exports are due mainly to active demands from the United States, there is, as sad experience proves, absolutely no reason to expect that the increased importations will come mainly from the United States. In fact, it is not at all impossible that the marked benefits of trade prosperity, for which the United States is largely responsible, may go entirely to the European manufacturer.

Shipping facilities and freight rates are affected by the extent to which full cargoes are to be had in both directions between countries

trading with each other. For example, movement of cargo only in one direction between the United States and Brazil would make unprofitable any return service, with the result that rates charged on that one-way traffic probably would be higher than if direct return cargoes were assured; and the means of communication for passengers and mails would be unsatisfactory for the best development of trade relations. The triangular service formerly maintained by way of European ports to South America demonstrated the disadvantages of round-about routing in one direction.

It does not follow, however, that the development of satisfactory direct shipping facilities in both directions between the United States and South American ports depends solely on the movements of goods between any two terminal points. An illustration may be drawn from the service between New York and Rio de la Plata ports in Uruguay and Argentina. The location of the logical routes takes vessels in this service close to nearly all the important ports of eastern South America. Allowance must be made, therefore, for the chance of carrying cargo between Argentina and Brazil, between Argentina and Brazil and the West Indies, and between all of them and the United States before answering the question as to availability of full cargoes in both directions. Conditions of exactly the same sort appear in the shipping between the United States and other parts of South America, and in some cases this way traffic is no less important than the through traffic.

It is argued, of course, that stopping at several ports, as between New York and Buenos Aires, makes the service slow, about three to four weeks, and that trade to Argentina, for example, could be developed more readily if the shipper at this end were in closer touch, say 15 to 17 days, with the Argentine market. This, it is believed, would be possible if there were large enough offerings of cargo in each direction, by inaugurating a through service with larger and faster ships. Increasing the speed of the vessels, however, increases costs of operation without any proportionate increase in earnings, unless there is a large high-class passenger traffic to be expected. If the costs of fast service had to be borne by freight earnings, as largely would be the case in South American relations, cargo rates probably would be prohibitive for some wares. It certainly is not to be expected, for example, that shipments of Argentine cereals would be encouraged by such shipping conditions, and most of the wares exported from South America are of about that type.

It appears then that United States purchases in Brazil may affect shipping facilities not only to Brazil but also between Argentina and this

country, because of the fact that ships can load with Argentine flour and meat for Brazilian ports and there take on coffee or rubber for New York, thus carrying full cargo all the way. But it is not apparent that this buying affects the extent of sales of United States wares either in Argentina or in Brazil.

The final point to consider is what South America has to sell, how much of these wares the United States now imports, and what part of these imports come from South America. Table II shows the values for recent years.

TABLE II

SOUTH AMERICAN STAPLE EXPORTS AND THE UNITED STATES MARKET

(Average Annual Values 1909–13, in Thousands of Dollars)

Wares	Approximate Total Exports from South America	Imports to United States from all Sources	Imports to United States from South America
Coffee	$215,000	$95,132	$81,873
Cereals	157,500	4,154	243
Rubber	97,000	84,443	35,442
Nitrate	97,000	16,542	15,766
Wool	59,000	37,655	6,519
Hides and skins	50,000	95,708	21,747
Linseed	40,000	10,376	3,597
Meats	27,800	3,731	351
Tin	20,000	38,838	2
Cacao	17,500	14,820	4,258
Copper	14,600	44,414	9,372
Chemicals	14,000	68,104	4,282
Cotton	10,600	19,484	915
Sugar	9,000	96,680	1,436
	$829,000	$632,091	$185,813

So far as mere values are considered, in more than half these products the United States already is importing from all sources nearly or quite as much as all South America has to sell. But as regards the greatest of the exports, coffee, cereals, rubber, nitrate, and wool, the South American production is far in excess of what the market of the United States requires. Although for most of the other exports South America would need no other market than that of the United States, it is unlikely that the United States consumer in every case would find the South American product the best to buy. Nearer sources of supply, better prices, special qualities, and other reasons might make buying elsewhere more advisable. On the other hand, if the South American product were in every case the best to fill the needs of the United States consumer, that in itself would

not in any way create a corresponding advantage for United States wares in the South American market. For example, it really approaches absurdity to argue, because the United States might buy all of the South American tin, that, as a result, Bolivia, the producer, would turn to this country for most of its imports. Yet this is only a specific application of the general proposition.

Experiences in Brazil, in Chile, in all South America, in fact, indicate that buying is one of the least factors in affecting chances to sell. If qualities of goods, prices, credits, details of packing and shipping, and the like are properly looked after by United States exporters, the "selling more to South America" will be realized to the complete satisfaction of all.

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BOOK REVIEWS AND NOTICES

Principles of Labor Legislation. By JOHN R. COMMONS and JOHN B. ANDREWS. New York: Harper, 1916. 8vo, pp. x + 524. $2.00.

The authors of this volume enter a singularly unoccupied field, when its scope and importance are considered. It is true that Stimson in 1896 made a valuable pioneer contribution to the subject of labor legislation in the United States, and the present reviewer went more inclusively into the subject in 1911, while numerous treatises take up phases of the question. But the present work is not restricted by national boundaries nor the present-day status, more nearly resembling the work of Massé, Pic, and Bry than that of any American or English writer, since it not only presents comparative studies, but also gives considerable space to the subject of historical development and the conditions under which laws come into being. Furthermore, the social and economic effects produced or desired are presented with a good degree of fulness. Indeed, it is this developmental aspect that differentiates the work as a whole from any other that has attempted anything like it in scope.

The avowed purpose of the work, as the name suggests, is to "formulate fundamental principles which may be generally applied," working on the assumption that there is a "science of legislation" whose laws may be thus worked out. There is no one who has struggled with the maze of law-making, with its interaction of legislative and judicial processes, but will welcome any serious effort in this line; and if there is difference of opinion as to the degree of present achievement, it is only the common fate of the pioneer who seeks to blaze a straight way through complexities which offer a choice of conclusions rather than an authoritative precedent in many a branch of the law.

The opening chapter on "The Basis of Labor Law" seeks to ground the subject on the two fundamentals of public benefit and equal protection of the laws; yet it is pointed out that the one distinctive spring of labor legislation is the necessity that the laborer, political peer of his employer though he be, shall be given a statutory preference in the market place, to the end that economic inequalities may at least be reduced if not removed; in other words, that there be a sort of artificial leveling up in the interests of society as a whole.

"Individual Bargaining" and "Collective Bargaining" are two chapter heads of contrasting significance as they stand, and covering wide ranges of subjects, reaching in the former from homestead exemptions to the restriction of immigration, while under the second are discussed all phases of trade-union aspiration and mode of attainment. The groupings adopted lack something of convincingness, since practically every item considered in the earlier chapter affects the condition of the collective bargainer, who is in turn the most earnest and most effective advocate of much of the regulatory matter discussed under the distributive heading. But doubtless this is only saying that the union workman takes his individual earnings from his employer's hands under the same general conditions as does he who goes alone to the acceptance of the employment conditions, with no "trade agreement" to determine either the larger aspects or the more minute details of the contract. There is after all a degree of correlation between the various topics, and in their presentation there is here set forth an array of causative facts, together with results both general and specific, that probably cannot be found in equal space elsewhere.

More homogeneous is the discussion of the minimum wage and its principles, methods, and achievements at home and abroad, the presentation of which is as complete as the alloted space allows. Likewise compact and clear are other chapters on the more concrete themes of "Hours of Labor," "Unemployment," and "Safety and Health," though there is in their treatment an adequate recognition of their relation to the whole subject of the employment status, on the one hand, and to the social organism of which that status is but one of a number of factors, on the other.

The chapters on "Social Insurance" and "Administration" are of primary interest and suggestiveness. The treatment of the former subject necessarily is a presentation of principles and objectives rather than of the actual achievements of any one country, above all of the United States; while in both chapters are found statements of position that will doubtless continue to be debated, though there are quite definite opinions expressed, and much that is persuasive adduced in support. However—to note a single instance—when it is assumed, as the authors do assume, that a degree of compulsion is an essential element of social insurance in order to the attainment of adequacy of either scope or stability, there is in immediate evidence a stumbling-block to the unsocialized American employer and his likewise unsocialized body of employees, whose much-discussed mobility, or the instability of whose employment rather, has recently gained added notoriety and explanation

in the confessions of employment officers as to the extent of the annual "labor turnover" in some of our large industrial undertakings. Then, too, one may query how it is known that "the best thought is now against" a method of compensation for permanent partial disabilities which is in use in the great majority of state laws, i.e., a fixed schedule—this system having been adopted as an amendment in two cases after trial of the recommended method. Perhaps one must choose here, as so often, between the desirable and the feasible, and the future may hold the key to the problems of administration that are the chief difficulty in the way of both the ideas noted.

The theme of the concluding chapter is a favorite one with Professor Commons. The old-time trinity of governmental powers does not appear adequate to meet the situation of today, and "a fourth department of government" is added, defined as "a method of legislation," "legislation in action," yet spoken of again as being primarily for the purpose of investigation. The embodiment of the idea is the industrial commission, which belongs primarily to the executive branch of the government, yet is given the legislative powers of investigation and of the formulation of regulations and orders to meet the conditions disclosed,[1] while perhaps going into judicial fields in its interpretation of laws and conditions. Whatever our conclusion as to the necessity for a new classification of powers, it may seem that the inclusion of purely investigative, temporary bodies cannot be justified, since they lack the enacting force that rests with the legislature, and are without enforcing power, even by means of reports to prosecuting officials, and do not seem to be charged at all with administration.

A select bibliography is given, and some two or three hundred law cases are cited, besides numerous statutes, both American and foreign. Occasional errors are almost inevitable in a work of such inclusive detail, though but few were discovered in a fairly thorough reading. It is hard to understand, however, how there could occur such a misleading juxtaposition as the mention of a beneficent legitimation of the payment to wife or child of the wage debt due a deceased employee, in connection with laws intended to prevent the procuring of harsh releases in cases of death by accident (p. 58).

[1] An interesting current happening is the action of the Supreme Court of Wisconsin, which held by a divided court that the industrial commission law of that state is unconstitutional as delegating legislative powers to a body not competent to exercise the same. A rehearing has been arranged for, and the final outcome will be awaited with the highest interest, as the idea has gained rapid acceptance since its presentation by the activities of the very state in which it is now in jeopardy.

The title of the work may lead some to an expectation that they do not feel to be realized, since, if one looks in the volume for declarations of principles with black-letter clearness, he is doomed to disappointment. But what is given is the most important contribution to the subject of the fundamental basis and desirable development of labor legislation in its broader aspects that is available in the English language, and will probably continue to be such for a long time to come.

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An Introduction to the Study of Organized Labor in America. By GEORGE GORHAM GROAT. New York: Macmillan, 1916. 8vo, pp. xv+494. $1.75.

In his new book Professor Groat has undertaken to present an introductory study of labor organizations in America. His purpose is to encourage "a more general interest in the subject" (p. v). "It is to start the study of the organized labor movement, not to conclude it" (p. xiii). "Any finality would be fatal to the purpose" (p. v). The desire to stimulate an interest in a subject of such vital importance to our industrial life, to convey some understanding of the problems and spirit of the labor movement of our day, is a highly commendable purpose. But testing the book by his own standards, the reviewer is of the opinion that Professor Groat has not accomplished well the task he set for himself. Not much of the spirit of the labor movement can be obtained from this book, principally because it smacks too much of information gained from government documents and reports, rather than from an intimate acquaintance with labor men and labor issues.

The book is clearly designed for classroom use. As such it would be used in most institutions after an introductory course in general economics, which means that it would usually be in the hands of Juniors and Seniors. While the text would be introductory to this specialized field, it would in most cases be used by students of some degree of maturity. During the last two years of college training, the teacher should use his best efforts to stimulate the power of independent thinking on the part of his students. When an author thinks "best to keep the pages of an introductory study free from the interruptions of such references"—i.e., footnote references (p. vii)—he wilfully shuts off from the student one of the most fruitful sources of independent research. While footnote references may be overdone, they are clearly underdone in

this text. The author seldom suggests the important sources from which he has drawn his information, nor does he give in connection with his various chapters a list of references that might be useful in guiding further study by the student. The very brief suggestions given in the introduction are entirely inadequate for this purpose.

In the second place, the author has apparently not applied a rigid and critical test to his plan to determine whether his treatment is to be simply descriptive, analytical, or functional. There is a distinct failure to stress cause-and-effect relations. In the first two chapters—"Beginnings in England" and "Beginnings in America"—this fault is especially prominent. The author doubtless felt constrained for space and cut these chapters to a minimum. The result is that the first chapter particularly is little more than a group of statements that can, therefore, be of small use to the student except as an exercise of the memory. A very little more space would have enabled the author to give the students a fair notion of the causal relations that existed between the separation of the peasants from their rights in commons and the use of land; of the tendency toward the development of manufacturing and the factory system; and of the separation of the journeymen from the ownership of tools and materials, and the resulting effects in developing a wage-earning class and the modern problems of labor. Hasbach's *History of the English Agricultural Labourer*, and Hammond's *The Village Labourer*, as well as many other treatises, have many illustrations that would be well adapted for this purpose. If space had really been an item, the chapter on wage theories could have been left out in order to make room for a fuller historical setting. This chapter is not intimately related to, nor does it advance the theme of, the author. It is also entirely too brief to be of independent value as a discussion of wage theories.

Order of arrangement and the descriptive titles for the various divisions of a book are largely a matter of personal judgment, but I am inclined to think that most students of the labor movement will be somewhat shocked and disappointed when they turn to the third and most important division of the book—that on "Collective Bargaining"—to find that the strike is made the starting-point for the study of this important activity of labor organizations. I am well aware that the strike has often preceded organization and collective action in many trades and industries, but as an illustration of the activities of labor organizations of today the strike is, with most unions at least, a means of last resort, and logically should appear at the end of a treatment of collective bargaining rather than at the beginning. The normal function

of a trade union is to make a collective agreement of some kind, and it would seem that the methods employed by labor organizations in making agreements would be the proper approach for the treatment of the subject of collective bargaining.

The order of arrangement in this section is as follows: Two chapters are devoted to the strike, in which definitions of strikes and lockouts, history of early strikes, strike statistics, classification of causes, and other documentary information are compiled with great detail. Then follow two chapters on arbitration, which are devoted in the main to legal provisions for conciliation and arbitration; two on the boycott, two on the closed shop, one on the trade agreement, one on restriction of membership and output, and one on trade-union benefits. The reviewer submits that neither the order of arrangement nor the treatment of the topics is well conceived to accomplish the purpose which Professor Groat sets for himself.

I cannot refrain from making one criticism on the general make-up of the book. The use of heavy-type paragraph headings is likely to make any text choppy in appearance. When such headings are used as frequently, and often with as little reason, as in this text, they become a cumbersome handicap in the use of the book. A much better mechanical device is to number the paragraphs or sections and group all of these headings at the beginning of the chapters, or let them appear in a table of contents.

It must not be concluded from the foregoing criticisms that the book is wholly bad. Professor Groat has shown great industry in bringing much valuable information within the two covers of a book. Certain portions, such as those dealing with conspiracy and the legal restrictions on union activity, show the influence of his earlier studies in this field. The student will, I am afraid, lay down the book with a feeling of regret. He will catch no such inspiration as may be gained from the works of the Webbs, nor does the text measure up to the standard set by Commons and Andrews in their recent book in the kindred field of labor legislation.

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The Single Tax Movement in the United States. By ARTHUR NICHOLS YOUNG. Princeton: Princeton University Press, 1916. 8vo, pp. x+340. 1.50.

Dr. Young, after interesting reference to the anticipators of Henry George, has given a very satisfactory history of *Progress and Poverty*

and its author up to the grand climacteric of the middle eighties, followed by a full and patiently authenticated narrative of what has been by common consent designated as the single-tax movement, in its different forms and phases from 1886 to the present time.

The immediate and favorable reception which has been accorded to *The Single-Tax Movement in the United States* is indication that the time and place await it. The order and sequence of the book, with its maximum of condensed information and minimum of personal opinion, puts it far ahead of all competitors as a compendium for students and inquirers. The author, of whom it may truthfully be said that he seems born to fair conclusions, is not niggardly of his judgments, but so plainly are these the necessary deductions from long lines of facts, that it is difficult for either friend or foe to take grave exceptions.

Dr. Young, in cataloguing precursors of Henry George's ideas, discusses "(1) some of the more specific anticipations of George's characteristic doctrines" by various isolated writers, by socialists, by the German "Bodenreformers," and in movements for the special taxation of land; and "(2) the relations between George's doctrines and the doctrines of the leading economists, from the Physiocrats to Cairnes" (p. 2).

Chaps. ii, iii, and iv are those which deserve to be dignified as history—the history of the Henry George movement. These are devoted to the staging of *Progress and Poverty* from the time Henry George first set foot in San Francisco in 1858 through its complete production in 1879, and covering the period of its enthusiastic reception and self-propagation, during the following five years.

About this time, in the words of one of George's critics, as quoted by Dr. Young, Henry George had "arrayed on his side not a few of our ablest literary men, magazine writers, presidents and professors in colleges and universities, statesmen and jurists of recognized ability and integrity, together with some leading merchants and manufacturers." To this Dr. Young adds: "The partial and inadequate replies to his arguments and the exhibitions of bad temper and poor taste in denouncing them formed but a poor offset to the brilliancy and persuasiveness of *Progress and Poverty*," thus, as it would seem, according to its author a place upon a high pinnacle. Dr. Young further says: "Henry George's ideas had surely been receiving all the attention that any social reformer could desire." To this, as though to cap the climax, he adds the testimony given in 1884 by Professor Arthur T. Hadley, now president of Yale University: "Henry George exercises a strong influence over a

vast number of people. We must face the fact squarely, whether we like it or not. His books are sold and read in America and England as no other books are sold and read; the sales are numbered by the hundred thousand, the readers by the million" (pp. 87–88).

At this period, then, it would seem that there were open to this latest reformer all the educational channels of the world. Writers, periodicals, schools, pulpits and rostrums, colleges and universities with professors and presidents, statesmen and jurists, in addition to the greatly enlarged audience provided by the translation of his writings into many languages—all these opportunities were open to a continuance of what had already begun, the materialization of the vision of the prophet, and its reduction to a demonstrable science. One naturally asks why it is that today most of these channels have been practically closed; and being closed, how they can be reopened, and why it is that the exchange of *Progress and Poverty* for politics has turned out to be a delusion and a snare. There is nothing in the important contribution which this book brings to the understanding of the single-tax movement more valuable than the data it furnishes upon which this vital question can be intelligently answered. It indicates with sharp definiteness the point at which the irresistible force of education was relegated to the background in favor of the always confusing and divisive force of political action.

Had Dr. Young done no more than to lay his finger upon the strategic error which abruptly checked and for thirty years has hindered the progress of the single tax, he would have earned the gratitude of all who believe this movement to contain the potentiality of vast benefit to the human race.

In 1886, only two years later, the movement assumed a different phase; and in chap. v our author deals chiefly with this differentiation in character, methods, aims, and personnel from the Henry George movement of the previous chapters. These modifications had been so considerable that even a new name was called for; and in 1887 it began to be called the single tax. Few or none of the agencies of the first movement projected themselves into this second phase.

After a record of the Delaware campaign (1895–96) Dr. Young summarizes the fruits of the past thirty political years and presents figures showing that during seventeen of those years, beginning with 1898, and ending with the year 1915, the Single Taxers at widely separated intervals prosecuted in the western states of Washington, Colorado, Oregon, Missouri, and California no less than eighteen major political campaigns. Of the issues in these campaigns, thirteen were mainly the

exemption of improvements, and five involved local option—not one of them involved primarily the fundamental principles underlying the single tax.

In the first three elections occurring within a period of twelve years, i.e., Washington, 1898, Oregon, 1908 and 1910, in an aggregate of 229,070 votes cast, 40 per cent were for and 60 per cent against. During the three years, 1912–15 inclusive, the total votes cast were 3,223,298, of which 32 per cent were for and 68 per cent against. That is to say, the percentage "for" was, in the latter period, 1912–15, 8 per cent less than for the twelve-year period 1898–1910. This indicates either a declining interest in the subject, or else that the single tax, being now taken seriously by all, was vigorously opposed by some. Consolation for both friends and foes may, however, be found in the fact that these elections with their differing issues have small significance as bearing on the Henry George movement.

Dr. Young, under the caption of "Single Tax and Taxation of Land Values," gives generous consideration to the efforts of the limited number of those disciples who have persisted along the less dramatic and non-political lines. The closing chapter contains not only a survey of the legislative achievements of the movement, but a few references to its most important "adversaries," along with an interesting enumeration of the "persistent objections" with which the single tax has been confronted. A list of "Single Taxers who have taken an active interest in the tax abuses of their respective localities would," says our author, "be a long one." Among these there appears in bold relief the name of Mr. Thomas G. Shearman, who has contributed the sanest series of vital conclusions that have yet been evoked by the teaching of Henry George.

The book is supplemented by a useful bibliography and other addenda.

C. B. FILLEBROWN

BOSTON, MASS.

Studies in the Cost of Urban Transportation Service. By F. W. DOOLITTLE. New York: American Electric Railway Association, 1916. 8vo, pp. 467+xxiii. $3.50.

Studies in the Cost of Urban Transportation Service is a book that should have a special interest for the economist. Facts about any business are difficult for the outsider to get, and the economist has frequently to do pretty broad and far-reaching reasoning from a rather

restricted basis of concrete information. There is no doubt that all the discussions involving tariff, wages, interest, profits, regulation, etc., would gain much in directness, accuracy, and usefulness if it were possible to have, about all branches of business, the sort of information that is given so fully in this book about the street-railway business. The information is frankly presented by the street railways themselves, having been prepared for the purpose of putting before the public the difficulties of the present situation.

The book is the outgrowth of the work done by the Bureau of Fare Research of the American Electric Railway Association. Mr. F. W. Doolittle was chosen as director of this bureau, and he has here given a comprehensive summary of the results of studies and investigations of the factors affecting the cost of passenger transportation service. The discussions seem to be free from special pleading, and a student of street-railway problems will find a great amount of information.

Only a few years ago street railways were looked upon as one of the most conspicuous examples of private enterprise prospering unduly because of monopoly privilege. The protestations of the companies that this was not true received little attention until the inroads of the automobile on transportation earnings became obvious to everyone. If this new factor in transportation were the only disturbing element, the problem would be less interesting because it would be only a case of a new product lessening the demand for an old one. The automobile, by taking away business, has, however, accentuated the economic structure of the street-railway business, and there have been brought out more plainly the influences and economic tendencies to which the business is subject.

Great changes may be brought about in the financial condition of a property by changes in the investment cost for each dollar of gross receipts, or by changes in the operating expenses for each dollar of receipts, or by changes in the rate of return that will be attractive to the investor. The interplay of these influences is at times counteracting and at other times becomes cumulative.

With the ordinary business one may raise the selling price of the product if operating expenses increase; the street railway has a fixed fare. If to care for additional business requires greater investment for a dollar of receipts than formerly, the ordinary business may rest content with the amount of business already done, but the street railway must take care of increasing business regardless of increased investment for a dollar of receipts. If a rise in the rate at which investors are satisfied

will not permit of new investment for new business, the ordinary business does not increase. The street railway must, however, care for the business that offers, even if something is taken from the returns to the old investors in order to get new ones.

If the street-railway business were one with returns always increasing with increased business, conditions would not be permanently onerous, but the comparison between large and small properties does not give evidence of these increasing returns. As a matter of fact, it is some of the larger street-railway systems that give the greatest evidence of distress.

Increased gross business tends in some directions to increasing returns, for with the same haul expenses do not increase in proportion to additional riding, and some items like power and some of the general expenses grow less per ride as the business grows larger. On the other hand, much of the new business comes from outlying districts where the haul is long, and gross earnings frequently increase only because of extensions. The longer haul for the same price per ride tends to decreasing returns. It seems to be true that any street railway doing its duty or looking after its selfish interest will make new investment for any new business that will yield an attractive return on the additional investment, thus causing a tendency toward earnings as a whole that will yield no more than a minimum attractive return on the investment that the business requires.

Any business in which there is not a tendency toward increasing returns with increasing business and investment, is in danger of getting into difficulties if the additional investment is dictated, not by the needs and advantages of the business, as a business, but by some other influence, such as general social advantage. Investment that is economically wise for street railways depends upon the amount of new receipts it produces, upon the cost of operation for each dollar of new receipts, and upon the return on investment that is attractive. If new investment is forced upon it for expensive bridges, or paving, or other things that do not increase the receipts or decrease the operating expenses or lower the rate of return that will prove attractive, then the margin of profit quickly disappears and the property cannot take care of its legitimate extension. When this condition occurs, the attractive rate of return for new investment is also likely to rise, making the situation still worse.

When for any reason the operating ratio becomes higher, it becomes impossible to spend so much for the new plant necessary to care for a unit of new business if a return that will be attractive is to be secured.

Thus with the street railway anything like automobile competition which thins out the gross receipts per mile of track and per car mile cuts in two ways. It results in a higher operating ratio because of thinner business and it also necessitates a larger investment for a dollar of new business because there must be more than the normal plant of track, cars, paving, power house, etc., to care for a unit of thin business.

Many of these principles are of course always more or less vaguely recognized, but it is usually felt that the margin of profit in a monopoly like urban transportation is sufficient to make it unnecessary to reason about the principles very closely. A careful reading of this book will be likely to astonish one at the amount of study, investigation, and calculation the street railways have been put to, in understanding and meeting their problems.

RUSSELL ROBB

BOSTON, MASS.

Middlemen in English Business, Particularly between 1660 and 1760. By RAY BERT WESTERFIELD. (Transactions of the Connecticut Academy of Arts and Sciences, XIX, 111–445.) New Haven: Yale University Press, 1915. 8vo, pp. 345. $3.40.

This book has for its purpose the giving of a "historical sketch of the origin and development of the middleman organization that served English business before the Industrial Revolution" (Preface, p. 113). It falls naturally, therefore, among the growing number of volumes on economic history, and will doubtless prove of service both to historians and to economists. For his material the author has had access (1) to "political, social, and economic tracts published as polemics, dissertations, complaints, and opinions on the contemporary questions that stirred the tongue and pen in the years of the past"; (2) to "published state, municipal and borough papers, including parliamentary reports and statutes"; and (3) to local and county histories (p. 113). From these three sources Dr. Westerfield has painstakingly collected and collated a mass of data to substantiate the thesis

> that there developed a trading and mercantile class, a new kind of man—one who saw and created opportunities for trade at home and abroad—who took the initiative in new methods of organization, correlating and establishing a mutual interdependence between specialized producers and consumers—who influenced the policies of state to the furtherance of commerce—and who undertook activities new to the economic life then existent [p. 124].

Writers on economic history have already pretty thoroughly sensed the condition set forth in this thesis, so that the volume has little to add to the sum of human knowledge, so far as theory is concerned. It is a service well worth the doing, however, to put content of fact into the theory, to establish fully by data from original sources the somewhat attenuated claims made by the writers of general histories. This service the author has performed thoroughly and admirably.

With a wealth of detail, Dr. Westerfield has traced the activities of the middlemen in English business, who "are understood to include the series of traders through whose hands commodities pass on their way from the maker or producer to the consumer" (p. 119–20), through the four great groups of industries, corn and corn products trades, animals and animal products trades, mineral trades, textiles and textile materials trades. The thoroughness of the work in this section establishes confidence in the "contrasts and comparisons" of the succeeding chapter. It is in this portion of the thesis (chap. ii–vi) that the real contribution lies. One can here follow even in detail the specialized activities of the "five-fold succession of middlemen—(*a*) a group of buyers of raw materials, (*b*) a group of jobbers and merchants of these materials, (*c*) a group of factors, (*d*) a group of wholesalers and manufacturing merchants, and (*e*) retailers" (p. 324). One can find a full definition and illustration of the technical terms of the various trades. The "badger," the "kidder," the "brogger," the "hostmen," the "crimp," the "draper," etc., are all defined, and their activities are described. And all of these middlemen, after having been discussed in connection with their particular trades, are assembled so that the reader can get a comprehensive view of English business.

But the author has felt it necessary for the rounding out of his subject to discuss the middleman from a more general point of view, i.e., to give his general economic functions, his changing social position, and his political influences (chap. vii). There is here a far less satisfactory treatment than in the earlier chapters. Dr. Westerfield himself has seen clearly the inadequacy of this chapter and has really disarmed criticism by offering his apologies in advance. "The seventh chapter," he says, "is given more as a supplement than as an integral part of the book" (p. 126). The content of this chapter—pertaining to the fairs and markets, the shops and stalls, the effect of better facilities for communication and transportation, and the factory system—has become familiar to many readers through histories of commerce. There are,

therefore, practically no new conclusions to be drawn from this part of the study.

The bibliography is, perhaps, somewhat more impressive than substantial, owing to the fact that so many of the references are to slight, ephemeral tracts, the "fliegende Blätter" of the day. And yet one finds thrust into the midst of these ephemerals the apparently casual reference to "*Blackwood's Magazine*, 1817–1914." The old familiar faces are here, the well-known writers on social, political, and economic affairs in the Restoration and Queen Anne periods, along with many new ones. It may be noted that among the modern secondary sources Traill's *Social England* finds no place. Has it nothing to offer on this subject? On the whole, the same thoroughness that characterized the early chapters is found here also, and the result is an excellent bibliography.

This is, then, a useful book, for the economist and the historian. The essential part of the work, the real contribution, seems carefully and thoroughly done. A too particular critic might be annoyed by certain quaintnesses, not to say awkwardnesses, in style, by numerous paragraphs and sentences that lack logic and coherence, and by a formality and inflexibility frequently apparent. But, in order to judge the writer fairly, one must realize how difficult a task it is to manage such a mass of heterogeneous detail. It may be enough, perhaps, to be clear and convincing in the general effect, without displaying all the graces and amenities of literary exposition.

C. S. DUNCAN

UNIVERSITY OF CHICAGO

American Banking. By H. PARKER WILLIS. Chicago: La Salle Extension University, 1916. 8vo, pp. xi+361. $2.00.

This volume presents a concise description and analysis of contemporary commercial banking with especial emphasis upon the federal reserve system. Fundamental principles are stated and explained without unduly burdening the reader with dates or statistics. Herein one may find the most satisfactory interpretation that has yet been written of the provisions of the Federal Reserve act. The author has been in intimate touch at Washington with the steps taken to formulate and apply the act, and this familiarity, coupled with his own well-known journalistic style, renders the chapters particularly pleasing to the reader.

The relative amount of space devoted to the different topics is well proportioned. After an introductory discussion of the functions of a bank and the different kinds of banks, the principles of banking are developed in a logical sequence from loans through deposits to bank notes and exchanges (chaps. i–ix, 132 pages). Problems of administration, reserves, and balance sheets receive proper mention (chaps. x–xii, 52 pages). The philosophy of government regulation of banking (chap. xiii, 20 pages) and a brief history of banking in the United States (chaps. xiv, xv, 35 pages) prepare one for a proper appreciation of the author's analysis of the Federal Reserve act and its probable operation in the future (chaps. xvi–xix, xxi, 94 pages). Comparisons with foreign experience are provided by a description of the banking systems of England, Scotland, France, Germany, and Canada (chap. xx, 23 pages).

The Federal Reserve act is not reprinted, but the author's careful and appreciative analysis is more than a mere substitute. He treats of the history of the act, its essential features, the sources of its provisions, the Federal Reserve Board and its form of organization for administration, government finances in relation to the reserve system, the regional character of the banks, the economic benefits secured by the act, the control of panics and the prevention of crises, the relation of state banks to the system, the future of commercial paper, acceptances, foreign branches, and the possibility of developing dollar exchange.

A few quotations will suffice to indicate the more important views and opinions of the author. As to its sources, the act is viewed as " . . . . the product of a lengthy course of development and has grown gradually out of the discussion and analysis of the past twenty years" (p. 250). "By many the new law is regarded as a partial copy of, or plagiarism from, the Aldrich bill; and that view has been widely expressed both in and out of Congress" (p. 251). "The theory and purpose of the new act are widely different from those of the Aldrich bill" (p. 252). " . . . . the act as a whole is based upon a conception and plan entirely its own, ... and includes several important innovations . . . . admittedly significant, not to say necessary, to any thorough reorganization upon sound principles" (p. 253). However " . . . . the original House bill, for strategic purposes, retained wherever it could safely do so the language of the Aldrich bill as regards banking technique" (p. 252).

The act will accomplish the end sought when "it leaves banking as such to be practiced by bankers; [and] it vests the control of banking in the hands of government officers" (p. 252). "Local control of banking,

local application of resources to necessities, combined with federal supervision, and limited by federal authority to compel the joint application of bank resources to the relief of dangerous or stringent conditions in any locality, are the characteristic features of the new plan" (pp. 280–81). "The general management of the new system has wisely been taken, in part, out of the hands of bankers; and has been placed, in a measure, in those of men representing commerce, industry, and agriculture. This is not because of distrust of bankers . . . . . It is due to a feeling, everywhere recognized, that the industrial portion of the community should be given a voice in the management of the commercial credit of the nation, and that banking is, in its highest and best sense, a semi-public function . . . . [and] . . . . , like transportation is no longer to be considered solely a private money-making industry" (pp. 294–95).

The author defends the establishment of regional banks by analogy with the conditions in Europe, saying: "So far as area is concerned, then, there would be room in the United States for a number of institutions corresponding to the total number of central banks throughout the European continent. . . . . It is a fact that no such extent of territory as the United States is dealt with by a single central bank" (pp. 281–82). "The federal reserve system, with its series of reserve holding institutions, therefore, does in fact correspond much more nearly to European practice than a single central institution with branches would have done" (p. 282).

The system will prevent panics even if the state banks do not join, for " . . . . Every institution, whether a member of the reserve system or not, will get the benefit of the improved situation" (p. 298). And he predicts that "single-name paper will no doubt maintain itself in the United States . . . ." (p. 46) because commercial paper has received a new definition. "The real test is whether the aggregate of the loans and receipts of the concern are intended to be used for, and are in fact used to anticipate, income from the claims that will mature within a short time. If such is the case, the concern is in a liquid condition and its paper may fairly be discounted as commercial paper" (p. 44). He advocates branch banking (p. 321) and has no confidence in the efficacy of guaranty of bank deposits (pp. 175–76). The last chapter concludes with an up-to-date discussion of the banking problem of financing exports to Europe under present conditions.

This volume has been designed for use as a textbook without further reading, for it has no bibliographical references whatsoever. (There is but one footnote.) At the end of each chapter there are about ten

questions. These questions are of the simpler variety, not designed to stimulate original thought upon the problems of banking science, but merely to act as a test of the reader's knowledge concerning the content of the respective chapters. There is a satisfactory index.

The treatment of domestic and foreign exchange (chaps. vi, vii) is unnecessarily involved. The financing of foreign trade is admirably described, but the factors determining the rate of exchange are not carefully worked out nor clearly stated. The bank statement reprinted on p. 183 (chap. xii) omits such important items of current reports as "stock in federal reserve bank," "customer's liability under letters of credit," "customer's liability account of acceptances by this bank based on imports and exports only" and "acceptances based on imports and exports." Some minor errors also appear in this chapter.

It may well be questioned whether: (1) the gold reserve held to redeem federal reserve notes has ever been as low as 10 per cent (p. 103); (2) national bank notes will be converted into *federal reserve notes* (p. 99); (3) "the more important" clearing-houses generally accept for clearance checks on out-of-town and distant banks (pp. 114–15, 117); (4) there is any relationship between the capital and the reserve of a bank so that they should be "classed" together (p. 152); (5) national or other banks never predict the dates for comptroller's calls (p. 195); (6) the usury laws never restrain nor restrict the exploitation of the needy (p. 200); (7) there was never more than *one* national currency association (p. 238). It is to be regretted that no distinction is made between clearing-house certificates and clearing-house loan certificates (pp. 123, 236). Despite these and other minor errors, the book will fill its obvious purpose—to introduce the American business man or academic student to the essence of modern banking with especial reference to the federal reserve system of the United States.

J. F. EBERSOLE

UNIVERSITY OF MINNESOTA

Holders of Railroad Bonds and Notes: Their Rights and Remedies. By LOUIS HEFT. New York: E. P. Dutton & Co., 1916. Pp. xvi+419. $2.00.

This is a discussion of the legal rights and remedies of the holders of railroad bonds and notes, intended primarily for the investor who wishes to know what his rights are. It is a statement of the law without the discussion of cases. While not written from the economic standpoint at all, it may be of interest to teachers who conduct elementary courses in corporation finance.

Readings on the Relation of Government to Property and Industry. By SAMUEL P. ORTH. Boston: Ginn & Co., 1915. 8vo, pp. viii+664.

A number of very excellent readings have been carefully edited and put into convenient form. The introductory readings deal with the general theory of so much of the social control of commerce and industry as has taken the form of law. Then follow readings upon some of the current problems in the legal control of business. These include governmental control of the ordinary business corporations as well as of public-service corporations, and the legal aspects of labor problems. The book closes with a collection of readings discussing the tendency toward, and the problems in, federal control of business. Most of the readings "have been taken from a source hitherto almost entirely neglected by the lay student, the law journals, repositories of much careful research and concise thinking on this subject." It is believed that the book does a real service in again calling the attention of political scientists and political economists to this literature, as would a book which brought home to the lawyers the results of the current thought of the political scientists and economists upon these problems.

Our Chief Magistrate and His Power. By WILLIAM HOWARD TAFT. New York: Columbia University Press, 1916. 8vo, pp. vii+165. $1.50

In the six chapters of this small book, originally delivered as a series of lectures at Columbia University, Mr. Taft gives an interpretation of the powers, duties, responsibilities, and limitations of the presidency as they appear to one with both outside and inside knowledge of the question. He explains some of the customs that have grown up around the office by referring to American constitutional history. By relating incidents connected with life at the capital and by making comparisons of our system of government with that of England, he points out defects and difficulties and suggests cures. In this connection he suggests that the term of office might better be a somewhat longer, single term; that the executive should be in closer touch with Congress in the initiation of legislation; that patronage should be limited; and that the adoption of a budget system is highly desirable. A delightful humor, which now and then breaks out into an almost audible Taft chuckle, makes the book very easy and pleasant reading.